SOLDIER'S MANUAL AND TRAINER'S GUIDE

MOS 94H

TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE) MAINTENANCE SUPPORT SPECIALIST SKILL LEVELS 1, 2, and 3

SEPTEMBER 2011

HEADQUARTERS, DEPARTMENT OF THE ARMY

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SOLDIER'S MANUAL and TRAINER'S GUIDE MOS 94H SOLDIER'S MANUAL, SKILL LEVEL 1, 2, 3 and TRAINER'S GUIDE , MOS 94H, Test, Measurement, and Diagnostic Equipment (TMDE) Maintenance Support Specialist

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PREFACE

This Soldier Training Publication (STP) is intended for Soldiers holding MOS 94H, Skill Levels 1, 2, 3, and 4, their supervisors, trainers, and commanders. It contains a MOS Training Plan providing information needed to plan, conduct, and evaluate unit training, one of the most important jobs of military leaders. It includes standardized training objectives in the form of task summaries that can be used to train and evaluate Soldiers on critical tasks supporting unit missions during wartime.

Soldiers holding MOS 94H should have access to this publication. Trainers and first-line supervisors should actively plan for Soldiers' access, making it available in work areas, unit learning centers, and unit libraries. However, it is not intended for an individual copy to be provided to each MOS holder. The STP is obtainable on line from the Reimer Digital Library (RDL) at https://rdl.train.army.mil/soldierPortal/soldier.portal.

This publication applies to the Active Army, the Army National Guard (ARNG)/Army National Guard of the United States (ARNGUS), and the United States Army Reserve (USAR) unless otherwise stated.

The proponent of this publication is United States Army Training and Doctrine Command (TRADOC). Submit comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Department of the Army, Training Directorate, Ordnance Training Division, ATTN: ATCL-TDF, 2221 Adams Ave, Fort Lee, VA 23801-2012.

CHAPTER 1

Introduction

1-1. General. This Soldier training publication (STP) identifies individual military occupational specialty (MOS) training requirements for Soldiers holding MOS 94H. Commanders, trainers, and Soldiers should use it to plan, conduct, and evaluate individual training in units. The STP is the primary MOS reference for supporting self-development, evaluating MOS proficiency, and training of 94H Soldiers. Commanders employ two primary methods to evaluate Soldiers' proficiency:

- Commander's evaluation. Commander's evaluations are local tests or assessments of Soldiers' performance of MOS-specific and common tasks critical to the unit mission. They may be conducted year-round.

- Common task test (CTT). CTTs are hands-on tests used to evaluate proficiency on common tasks. Alternate written tests are provided if equipment is not available for hands-on testing.

This publication is the Soldier's primary reference to prepare for a commander's evaluation of MOS-specific tasks. It contains task summaries for all critical tasks specific to the MOS and skill level (SL). Commanders and trainers will use this Soldier's manual/trainer's guide (SM/TG) to plan and conduct training and commander's evaluations.

Chapter 2, Trainer's Guide, contains information needed to plan training requirements for this MOS. The trainer's guide:

- Identifies subject areas in which Soldiers must be trained.

- Identifies critical tasks for each subject area.

- Specifies where Soldiers are initially trained on each task.

- Recommends how often each task should be trained to sustain proficiency.

- Recommends a strategy for cross-training Soldiers.

- Recommends a strategy for training Soldiers to perform higher-level tasks.

Use this STP along with STP 21-1-SMCT (Soldier's Manual of Common Tasks, Skill Level 1), STP 21-24-SMCT (Soldier's Manual of Common Tasks, Skill Levels 2-4), Army training and evaluation programs (ARTEPs), FM 25-5 (Training for Mobilization and War), and FM 7-0 (Training the Force) to establish effective training plans and programs that integrate Soldier, leader, and collective tasks.

1-2. Task Summaries. Task summaries outline wartime performance requirements for each critical task in the STP. They provide both Soldier and trainer with the information necessary to prepare, conduct, and evaluate critical task training. As a minimum, task summaries include information Soldiers must know and skills they must perform to standard for each task. Following is the task summary format:

- Task number. The task number is comprised of 10 alpha-numeric characters that identify the task and skill level. Include the task number and title in any correspondence relating to the task.

- Task title. The task title identifies the action to be performed.

- Conditions. The task conditions statement describes the field or garrison conditions under which the task will be performed and identifies the equipment, tools, references, job aids, and supporting personnel that the Soldier needs to perform the task in wartime.

- Standards. The task standards describe how well and to what level of proficiency the Soldier must perform the task under wartime conditions. Standards are typically expressed in terms of accuracy, completeness, duration, sequence, speed, and tolerance.

- Performance measures. This section identifies specific actions that the Soldier must accomplish to complete the task successfully. Performance measures appear in a GO/NO-GO rating format for easy evaluation. Some tasks may also include detailed training information in a Training Information Outline and an Evaluation Preparation Section. The Evaluation Preparation Section indicates necessary modifications to task performance in order to train and evaluate a task that cannot be trained to the wartime standard under wartime conditions. It may also include special training and evaluation preparation instructions to accommodate these modifications and any instructions that should be given to the Soldier before evaluation.

- References. This section identifies references that provide more detailed explanations of task performance requirements than are given in the task summary.

- Warnings. Warnings alert users to the possibility of immediate personal injury or equipment damage.

- Notes. Notes provide additional supportive explanations or tips relating to task performance.

1-3. Soldier's Responsibilities. Each Soldier is responsible for performing individual tasks identified by the first-line supervisor based on the unit's mission-essential task list (METL). Soldiers must perform tasks to the standards included in the task summary. If Soldiers have questions about tasks or which tasks in this manual they must perform, they are responsible for asking their first-line supervisor for clarification. First-line supervisors know how to perform each task or can direct Soldiers to appropriate training materials, including current field manuals, technical manuals, and Army regulations. Soldiers are responsible for using these materials to maintain performance. They are also responsible for maintaining performance of all common tasks listed in the SMCTs at their current skill level and below.

Periodically, Soldiers should ask their supervisor or another solder to check their performance to ensure that they can perform the tasks.

1-4. NCO Self-Development and the STP. Self-development is a key component of leader development. Leaders follow planned, progressive, sequential self-development programs developed by the individual NCO and his or her first-line supervisor to enhance and sustain military competencies. Self-development consists of individual study, research, professional reading, practice, and self-assessment. The self-development concept requires NCOs, as Army professionals, to take responsibility for remaining current in all phases of their MOS. The STP is the NCO's primary source for maintaining MOS proficiency.

Another important resource for self-development is the Army Correspondence Course Program (ACCP). Information is available at local education centers or on line through the Army Institute for Professional Development (AIPD) web site, http://www.train.army.mil/. The web site offers on-line enrollment.

1-5. Commander's Responsibilities. Commanders must ensure that their unit training plans prepare the unit for war by enabling Soldiers to develop and sustain proficiency in their MOS and skill level tasks. Commanders should design unit training programs to provide individual training for all Soldiers assigned to the unit and to evaluate Soldier proficiency routinely as part of the commander's evaluation program. The unit training program should also integrate individual training with crew drills and other collective training. The MOS training plan provides information on which to base integration, cross-train, train-up, and sustainment training programs. Commanders should use the MOS training plan when developing unit training plans.

1-6. Trainer's Responsibilities. Training is the business of all unit leaders. First-line leaders are the principal trainers in the unit because they directly supervise Soldiers and lead crews, squads, sections, and teams.

Trainers can use the MOS training plan to determine the critical tasks each Soldier is responsible for performing. They should tell each Soldier which tasks he or she must be able to perform. Trainers should evaluate task performance to determine which tasks each Soldier can or cannot perform to standard. Soldiers who cannot perform a task to standard need further training. This STP helps the trainer do what trainers get paid to do Train. Developing effective training is explained in detail in FM 7-0.

Every task summary in this STP includes performance measures, which trainers may use year-round to determine if Soldiers can perform critical tasks to the specified standards. The performance measures identify what the trainer needs to observe to score a Soldier's performance. A blank space is provided for the trainer to check either the GO or NO-GO column for each performance measure. Some tasks require the trainer to watch the Soldier perform them (evaluate the process). Other tasks call for the trainer to focus on the results of the Soldier's performance (evaluate the product). Comments should not be written on the task summary.

Trainers can monitor the progress of their Soldiers by recording task GO/NO-GO results. Trainers may use DA Form 5164-R (Hands-On Evaluation) to record the performance measures a Soldier passed or failed. The form, which may be locally reproduced, applies to all tasks in this STP. Trainers may have DA Form 5164-R over printed with information unique to their training requirements before reproducing it.

Trainers may use DA Form 5165-R (Field Expedient Squad Book) to record hands-on go/no-go results for a group of Soldiers (for example, a crew, section, or squad) having the same MOS and skill level. This form supports conduct of commander's evaluations, and can be used to record training results gathered in the field during slack time for all MOSs and skill levels. Use of this form is optional. Trainers should work with each Soldier until tasks can be performed to specific task summary standards.

1-7. Training Support. References have been identified for each task to assist in planning and conducting training. A consolidated list of references identified by type, publication number, and title and a comprehensive glossary of acronyms, abbreviations, and definitions are included in this STP.

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CHAPTER 2

Trainer's Guide

2-1. General. The MOS Training Plan (MTP) identifies the essential components of a unit training plan for individual training. Units have different training needs and requirements based on differences in environment, location, equipment, dispersion, and similar factors. Therefore, the MTP should be used as a guide for conducting unit training and not a rigid standard. The MTP consists of two parts. Each part is designed to assist the commander in preparing a unit training plan which satisfies integration, cross training, training up, and sustainment training requirements for Soldiers in this MOS.

Part One of the MTP shows the relationship of an MOS skill level between duty position and critical tasks. These critical tasks are grouped by task commonality into subject areas.

Section I lists subject area numbers and titles used throughout the MTP. These subject areas are used to define the training requirements for each duty position within an MOS.

Section II identifies the total training requirement for each duty position within an MOS and provides a recommendation for cross training and train-up/merger training.

- **Duty Position Column**. This column lists the duty positions of the MOS, by skill level, which have different training requirements.
- **Subject Area Column**. This column lists, by numerical key (see Section I), the subject areas a Soldier must be proficient in to perform in that duty position.
- **Cross-Train Column**. This column lists the recommended duty position for which Soldiers should be cross-trained.
- **Train-Up/Merger Column**. This column lists the corresponding duty position for the next higher skill level or MOSC the Soldier will merge into on promotion.

Part Two lists, by general subject areas, the critical tasks to be trained in an MOS and the type of training required (resident, integration, or sustainment).

- **Subject Area Column**. This column lists the subject area number and title in the same order as Section I, Part One of the MTP.
- **Task Number Column**. This column lists the task numbers for all tasks included in the subject area.
- **Title Column**. This column lists the task title for each task in the subject area.
- **Training Location Column**. This column identifies the training location where the task is first trained to Soldier training publications standards. If the task is first trained to standard in the unit, the word “Unit” will be in this column. If the task is first trained to standard in the training base, it will identify, by brevity code (ANCOC, BNCOC, etc.), the resident course where the task was taught. Figure 2-1 contains a list of training locations and their corresponding brevity codes.

AIT	Advanced Individual Training
UNIT	Trained in the Unit
ALC	Advanced Leader Course
SLC	Senior Leader's Course
SNCOC	Senior NCO Course

Figure 2-1. Training Locations

- **Sustainment Training Frequency Column**. This column indicates the recommended frequency at which the tasks should be trained to ensure Soldiers maintain task proficiency. Figure 2-2 identifies the frequency codes used in this column.

BA	- Biannually
AN	- Annually
SA	- Semiannually
QT	- Quarterly
MO	- Monthly
BW	- Biweekly
WK	- Weekly

Figure 2-2. Sustainment Training Frequency Codes

- **Sustainment Training Skill Level Column**. This column lists the skill levels of the MOS for which Soldiers must receive sustainment training to ensure they maintain proficiency to Soldier's manual standards.

2-2. Subject Area Codes.

Skill Level 1

1 Shop Operations and Production Control
2 Direct Current (DC) and Low Frequency
3 Oscilloscopes and Fiber Optic Equipment
4 Signal Generator
5 Microwave and Radio Frequency (RF)
6 Physical-Dimensional and Aviation
7 RADIAC
8 Calibration Set 2000 (CALSET 2000)

Skill Level 3

9 Maintenance Operations
10 Maintenance Management

2-3. Duty Position Training Requirements.

Table 2-1. 94H CAREER FIELD DUTY POSITIONS

94H CAREER FIELD DUTY POSITIONS			
Duty Position	**Subject Area**	**Cross Train**	**Train-up/Merger**
Skill Level 1			
TMDE Maintenance Support Specialist	1-8	N/A	94H2 TMDE Sergeant
Skill Level 2			
TMDE Sergeant	1-8	N/A	94H3 Team Chief
Skill Level 3			
Team Chief	9-10	N/A	94W4 Electronics Maintenance Chief
Skill Level 4			
Electronics Maintenance Chief	11-12	N/A	94Z5 Senior Electronics Maintenance Chief

2-4. Critical Tasks List.

MOS TRAINING PLAN
94H14

CRITICAL TASKS

Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
Skill Level 1				
Subject Area 1. Shop Operations and Production Control				
081-831-1042	Perform Mouth-to-Mouth Resuscitation	UNIT	QT	1-4
093-94H-1000	Perform Grounding Checks	AIT	QT	1-4
093-94H-1001	Perform Conductivity Checks	AIT	QT	1-4
093-94H-1010	Perform TMDE Technical Supply Operations (Software)	AIT	QT	1-4
093-94H-1020	Perform Automated Production Control Procedures	AIT	QT	1-4
093-94H-1030	Perform Classification Inspection of TMDE	UNIT	QT	1-4
Subject Area 2. Direct Current (DC) and Low Frequency				
093-94H-1100	Operate Work station Controller	AIT	QT	1-4
093-94H-1101	Operate Core Work station	AIT	QT	1-4
093-94H-1102	Operate Impedance Measuring System	AIT	QT	1-4
093-94H-1120	Perform Cross Checks	AIT	QT	1-4
093-94H-1125	Operate Time/Frequency Workstation	AIT	QT	1-4
093-94H-1130	Repair Frequency Counter	AIT	QT	1-4
093-94H-1131	Calibrate Frequency Counter	AIT	QT	1-4
093-94H-1140	Repair Multimeter	AIT	QT	1-4
093-94H-1141	Calibrate Multimeter	AIT	QT	1-4
093-94H-1170	Repair Simplified Test Equipment (STE)	UNIT	QT	1-4
Subject Area 3. Oscilloscopes and Fiber Optic Equipment				
093-94H-1200	Operate Oscilloscope Work station	AIT	QT	1-4
093-94H-1210	Operate Oscilloscope	AIT	QT	1-4
093-94H-1211	Repair Oscilloscope	AIT	QT	1-4
093-94H-1212	Calibrate Oscilloscope	AIT	QT	1-4
093-94H-1221	Calibrate Fiber Optic Equipment	AIT	QT	1-4
Subject Area 4. Signal Generator				
093-94H-1300	Operate Signal Generator Work station	AIT	QT	1-4
093-94H-1310	Operate Signal Generator	AIT	QT	1-4
093-94H-1311	Repair Signal Generator	AIT	QT	1-4
093-94H-1312	Calibrate Signal Generator	AIT	QT	1-4
093-94H-1320	Operate Pulse Generator	AIT	QT	1-4
093-94H-1330	Calibrate Radio Frequency (RF) Power Sensor	AIT	QT	1-4
093-94H-1340	Calibrate Attenuator	AIT	QT	1-4
093-94H-1350	Repair Power Meter	AIT	QT	1-4
093-94H-1351	Calibrate Power Meter	AIT	QT	1-4
Subject Area 5. Microwave and Radio Frequency (RF)				

CRITICAL TASKS

Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
093-94H-1400	Operate Spectrum Analyzer	AIT	QT	1-4
093-94H-1401	Repair Spectrum Analyzer	AIT	QT	1-4
093-94H-1402	Calibrate Spectrum Analyzer	AIT	QT	1-4
093-94H-1409	Repair Radio Test Set (Basic)	AIT	QT	1-4
093-94H-1410	Calibrate Radio Test Set	AIT	QT	1-4
093-94H-1420	Operate High Radio Frequency (RF) Power Measurement System	AIT	QT	1-4
093-94H-1431	Calibrate Radar Test Set	AIT	QT	1-4
Subject Area 6. Physical-Dimensional and Aviation				
093-94H-1103	Calibrate Linear Measurement Devices	AIT	QT	1-4
093-94H-1501	Calibrate Thermometer	AIT	QT	1-4
093-94H-1510	Operate Force Torque Standard	AIT	QT	1-4
093-94H-1511	Calibrate Torque Wrench	AIT	QT	1-4
093-94H-1512	Calibrate Tensiometer	AIT	QT	1-4
093-94H-1513	Calibrate Weighing Scale	AIT	QT	1-4
093-94H-1521	Calibrate Pressure/Vacuum Gauges	AIT	QT	1-4
093-94H-1530	Calibrate Fuel Quantity Test Set	AIT	QT	1-4
093-94H-1550	Calibrate Jet Cal	UNIT	QT	1-4
093-94H-1569	Repair Pitot Static Tester	AIT	QT	1-4
093-94H-1570	Calibrate Pitot Static Tester	AIT	QT	1-4
Subject Area 7. RADIAC				
093-94H-1600	Operate RADIAC Calibrator Sets	AIT	QT	1-4
Subject Area 8. Calibration Set 2000 (CALSET 2000)				
551-88M-1364	Operate Vehicle With Standard or Automatic/Semiautomatic Transmission	UNIT	QT	1-4
Skill Level 3				
Subject Area 9. Maintenance Operations				
093-94H-3000	Prepare Secondary Transfer Set for Mobile Operations	UNIT	SA	3-4
093-94H-3010	Repair Radio Test Set (Advanced)	ALC	QT	3-4
093-94H-3020	Perform Duties as RADIAC Custodian	ALC	QT	3-4
093-94H-3030	Maintain Automated Network System	ALC	QT	3-4
093-94H-3050	Conduct Quality Assurance Inspection	ALC	QT	3-4
093-SSG-3004	Submit a Quality Deficiency Report (QDR)	ALC	QT	3
093-SSG-3005	Submit Equipment Improvement Recommendation (EIR)	ALC	QT	3
093-SSG-3006	Plan Work Flow	ALC	QT	3
093-SSG-3007	Direct Performance of Preventive Maintenance	ALC	QT	3
093-SSG-3008	Provide Technical Assistance to Repairers	ALC	QT	3
093-SSG-3009	Perform Initial Inspections	ALC	QT	3
093-SSG-3010	Perform Final Inspections	ALC	QT	3
093-SSG-3012	Perform In-Process Inspections	ALC	QT	3

CRITICAL TASKS

Task Number	Title	Training Location	Sust Tng Freq	Sust Tng SL
Subject Area 10. Maintenance Management				
093-94H-3040	Manage Cross Checks	ALC	QT	3-4
093-94H-3060	Manage Shop Operations Using Automated Procedures	UNIT	QT	3-4
093-SSG-3001	Inspect Section/Shop Safety	ALC	QT	3
093-SSG-3002	Manage Section/Shop Security	ALC	QT	3
093-SSG-3003	Maintain Section/Shop Calibration Program	ALC	QT	3
093-SSG-3011	Write a Standing Operating Procedure (SOP)	UNIT	QT	3
093-SSG-3013	Maintain Property Accountability	ALC	QT	3
093-SSG-3014	Assess Battlefield Damage	ALC	QT	3
093-SSG-3015	Manage Demand Supported Repair Parts Listed on the Prescribed Load List (PLL)	ALC	QT	3
093-SSG-3016	Monitor Bench Stock Operations	ALC	QT	3
093-SSG-3017	Monitor Shop Stock Operations	ALC	QT	3
093-SSG-3019	Inspect Maintenance Support Team Operations	ALC	QT	3
093-SSG-3020	Inspect Maintenance Reporting and Management Data	ALC	QT	3
093-SSG-3021	Review SAMS Reports	ALC	QT	3

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CHAPTER 3

MOS/Skill Level Tasks

Skill Level 1

Subject Area 1: Shop Operations and Production Control

Perform Mouth-to-Mouth Resuscitation
081-831-1042

Conditions: Given an adult casualty who is unconscious and does not appear to be breathing. You are not in a chemical environment.

Standards: Perform mouth-to-mouth resuscitation correctly, in the correct sequence. Continue mouth-to-mouth resuscitation at the rate of about 10 to 12 breaths per minute until the casualty start to breathe on his own, the Soldier is relieved by a qualified person, or the Soldier is too tired to go on.

Note: The standard is based on American Heart Association information.

Performance Steps

Note: Conditions, standards, performance steps, and performance measures match task as it appears in STP 21-1-SMCT.

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1. Roll the casualty onto his back if necessary.

WARNING: The casualty should be carefully rolled as a whole, so the body does not twist.

2. Open the airway.

Note: If foreign material or vomit is in the mouth, it should be removed as quickly as possible (see step 7).

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a. Head-tilt/chin-lift method.
   (1) Kneel at the level of the casualty's shoulders.
   (2) Place one hand on the casualty's forehead and apply firm, backward pressure with the palm to tilt the head back.
   (3) Place the fingertips of the other hand under the bony part of the lower jaw and lift, bringing the chin forward.

Note: Do not use the thumb to lift.

Note: Do not press deeply into the soft tissue under the chin with the fingers.

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b. Jaw-thrust method.

Note: This method is usually used for casualties with a neck or severe head injury.

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   (1) Kneel above the casualty's head (looking toward the casualty's feet).

(2) Rest your elbows on the ground or floor.
(3) Place one hand on each side of the casualty's head and place the tips of the index and middle fingers under the angles of the casualty's lower jaw. Place your thumbs on the jaw just below the level of the teeth.
(4) Raise your fingertips to lift the jaw forward (upward). This action will also cause the casualty's head to tilt backward somewhat.

Note: If the casualty's lips are still closed after the jaw has been moved forward, use your thumbs to retract the lower lip and allow air to enter the casualty's mouth.

3. Check for breathing.
   a. Check for breathing within 3 to 5 seconds by placing an ear over the casualty's mouth and looking toward his chest.
   b. Look for the chest to rise and fall.
   c. Listen for sounds of breathing.
   d. Feel for breath on your cheek.

Note: If the casualty resumes breathing at any time during this procedure, the airway should be kept open and the casualty should be monitored. If the casualty continues to breathe, he should be transported to medical aid. Otherwise, the procedure should be continued.

4. Give breaths to ensure an open airway.

Note: When mouth-to-mouth resuscitation breathing cannot be performed because the casualty has jaw injuries or spasms, the mouth-to-nose method may be more effective.

Note: Perform the mouth-to-nose method by blowing into the nose while holding the lips closed. Let air escape by removing your mouth and, in some cases, removing your mouth and separating the casualty's lips.

   a. Maintain the airway and gently pinch the nose closed, using the hand on the casualty's forehead.
   b. Take a deep breath and place your mouth, in an airtight seal, around the casualty's mouth.
   c. Give two full breaths (1 1/2 to 2 seconds each), taking a breath between them, while watching for the chest to rise and fall and listening and/or feeling for air to escape during exhalation.

Note: If chest rises, go to step 8.

Note: If chest does not rise, continue with step 5.

5. Reposition the casualty's head slightly farther backward and repeat the breaths.

Note: If chest rises, go to step 8.

Note: If chest does not rise, continue with step 6.

6. Perform abdominal or chest thrusts.

Note: Abdominal thrusts should be used unless the casualty is in the advanced stages of pregnancy, is very obese, or has a significant abdominal wound.

a. Abdominal thrusts.

(1) Kneel astride the casualty's thighs.
(2) Place the heel of one hand against the casualty's abdomen, slightly above the navel but well below the tip of the breastbone, with the fingers pointing toward the casualty's head.
(3) Place the other hand on top of the first.
(4) Press into the abdomen with a quick forward and upward thrust.

Note: Each thrust should be a separate, distinct movement.

(5) Give several thrusts (up to five).

b. Chest thrusts.

(1) Kneel close to the side of the casualty's body.
(2) Locate the lower edge of the casualty's ribs and run the fingers up along the rib cage to the notch where the ribs meet the breastbone.
(3) Place the middle finger on the notch with the index finger just above it on the lower end of the breastbone.
(4) Place the heel of the other hand on the lower half of the breastbone next to the two fingers.
(5) Remove the fingers from the notch and place that hand on top of the other hand, extending or interlacing the fingers.
(6) Straighten and lock the elbows with the shoulders directly above the hands.
(7) Without bending the elbows, rocking, or allowing the shoulders to sag, apply enough pressure to depress the breastbone 1 to 2 inches.

Note: Each thrust should be given slowly, distinctly, and with the intent of relieving the obstruction.

(8) Give several thrusts (up to five).

7. Perform a finger sweep and repeat breaths.

a. Open the mouth by grasping the tongue and lower jaw to lift the jaw open or crossing the fingers and thumb to push the teeth apart.
b. Insert the index finger of the other hand down along the cheek to the base of the tongue.
c. Use a hooking motion from the side of the mouth toward the center to dislodge the object.

WARNING: Take care not to force the object deeper into the airway.

d. Reopen the airway and repeat the breaths.

Note: If chest rises, go to step 8.

Note: If chest does not rise, repeat steps 6 and 7 until the airway is clear.

8. Check for a pulse for 5 to 10 seconds.

Note: Use the first two fingers in the groove in the casualty's throat beside the Adam's apple. Do not use the thumb.

a. If a pulse is found but the casualty is not breathing, continue with step 9.
b. If no pulse is found, cardiopulmonary resuscitation (CPR) must be performed by qualified personnel. Send for qualified medical personnel.

9. Continue mouth-to-mouth resuscitation, at the rate of about 10 to 12 breaths per minute.

10. Recheck for pulse and breathing for 3 to 5 seconds after every 12 breaths.

Note: Once breathing is restored, watch the casualty closely, maintain an open airway, and check for other injuries.

Evaluation Preparation: Setup: For training and testing, you must use a resuscitation training mannequin (DVC 08-15). Have a bottle of alcohol and swabs or cotton available. Place the mannequin on the floor and alcohol and cotton balls on the table. Clean the mannequin's nose and mouth before each Soldier is evaluated.

Brief Soldier: Tell the Soldier to do, in order, all necessary steps to restore breathing. After step 3, tell the Soldier that the casualty is not breathing. When testing steps 4 and 5, you can vary the test by indicating whether the chest rises or not. If step 7 is tested, tell the Soldier that the airway is open. You can stop the evaluation when the Soldier rechecks for the pulse in step 10.

Note: Reference made to the mouth-to-nose method within the task presents information on an alternate procedure that must be used under some circumstances. This method will not be evaluated.

Performance Measures	GO	NO-GO
1. Rolled the casualty onto his/her back if necessary.	____	____
2. Opened the airway.	____	____
3. Checked for breathing.	____	____
4. Gave breaths to ensure an open airway.	____	____
5. Repositioned the casualty's head slightly farther backward and repeated the breaths.	____	____
6. Performed abdominal or chest thrusts.	____	____
7. Performed a finger sweep and repeated breaths.	____	____
8. Checked for a pulse for 5 to 10 seconds.	____	____
9. Continued mouth-to-mouth resuscitation, at the rate of about 10 to 12 breaths per minute.	____	____
10. Rechecked for pulse and breathing for 3 to 5 seconds after every 12 breaths.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO GO if any performance measure is failed. If the Soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
DVC 08-15	FM 4-25.11
STP 21-1-SMCT	

Perform Grounding Checks

093-94H-1000

Conditions: In an operational environment (OE), with a requirement to perform earth ground checks; a R1L-CR Digital Ohmmeter with accessories, grounding kit, ground area of sufficient size to conduct test (20 to 25 meters [m]), TM 11-5820-1118-12&P, R1L-CR manufacturer's manual TB 385-4.

Standards: Perform grounding checks using the R1L-CR Digital Ohmmeter in accordance with applicable manufacturer's manual. Observe all safety requirements in accordance with TB 385-4. Achieve a measured earth ground resistance of less than 25 ohms, and remote facility grounding point of less than 2 ohms.

Performance Steps

Figure 3-1. R1L-CR Earth Tester w/ Accessory Kit

1. Observe all safety precautions, warnings, and hazards.

WARNING: Testing of earth grounds can involve a possible hazard to the operator such as from a difference of potential caused by a return current to the ground under test, and induced voltages in the long wire test leads. The operator should wear electrician's safety gloves consisting of an insulating rubber inner glove and a leather outer glove. Testing should also not be done when there is lightning in the vicinity. Do not disconnect the ground of an energized circuit.

2. Setup equipment to perform grounding checks using normal method of test for earth electrodes employing the 62 percent method.
   a. Ensure instrument battery is charged prior to any connection to instrument terminals.

b. Hammer a test spike (the remote current electrode) into the ground 50 feet (15 m) away from ground electrode under test.
c. Hammer another test spike (the remote potential electrode) into the ground 31 feet (10 m) away from ground under test, in line with the remote current electrode just hammered in.
d. Disconnect the supplied shorting bar and any other wires between terminals of the R1L-CR.
e. Connect one of the supplied lead wires (short length suggested) between the -I terminal of the R1L-CR and the ground to be measured.
f. Connect one of the supplied lead wires (short length suggested) between the -V terminal of the R1L-CR and the ground to be measured.
g. Connect one of the supplied lead wires between the +I terminal of the R1L-CR and the farther current supplying auxiliary electrode.
h. Connect one of the supplied lead wires between the +V terminal of the R1L-CR and the closer potential measurement auxiliary electrode.

Note: The lead wire test clip can be placed around the auxiliary electrode rod directly behind the screw, washer, and wing nut assembly, so that the clip jaws grab between the rod and washer. Avoid having the large clip on the screw threads. The large test clips on the two supplied longer leads with take up reels are removable, if desired, for a spade lug connection to the auxiliary electrode rods via the threaded screw, washer, and wing nut assembly.

3. Operate equipment to perform grounding checks using normal method of test for earth electrodes employing the 62 percent method.
   a. Depress the R1L-CR "TEST" switch and read the LCD display for a ground resistance reading. Refer to the manual section concerning any outside of range or error conditions.
   b. Improve spike resistance as necessary.
   c. Read instrument display and take reading when stable (less than 25 ohms).
   d. Take corrective action in order to obtain required reading if reading of less than 25 ohms is not obtained.
   e. Release the "TEST" switch when measurements were not being made.
4. Document the measurements.
5. Setup equipment to perform facility grounding checks from the most electrically remote grounding point to the ground electrode.
   a. Connect leads from Ohmmeter to the most remote grounding point in the facility and the ground electrode.
   b. Select highest range.
   c. Switch instrument on.
   d. Decrease range in order to obtain highest resolution reading (less than 2 ohms).
   e. Take corrective action in order to obtain required reading If reading of less than 2 ohms is not obtained.
6. Document the measurements.
7. Maintain tools and equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, and hazards.	____	____

2. Setup equipment to perform grounding checks using normal method of test for earth electrodes employing the 62 percent method.	____	____
3. Operated equipment to perform grounding checks using normal method of test for earth electrodes employing the 62 percent method.	____	____
4. Documented the measurements.	____	____
5. Setup equipment to perform facility grounding checks from the most electrically remote grounding point to the ground electrode.	____	____
6. Documented the measurements.	____	____
7. Maintained tools and equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
CECOM TR 98-6	TM 9-6695-239-14
PPM INSTRUMENTS R1L-CR	
TB 385-4	
TM 11-5820-1118-12&P	

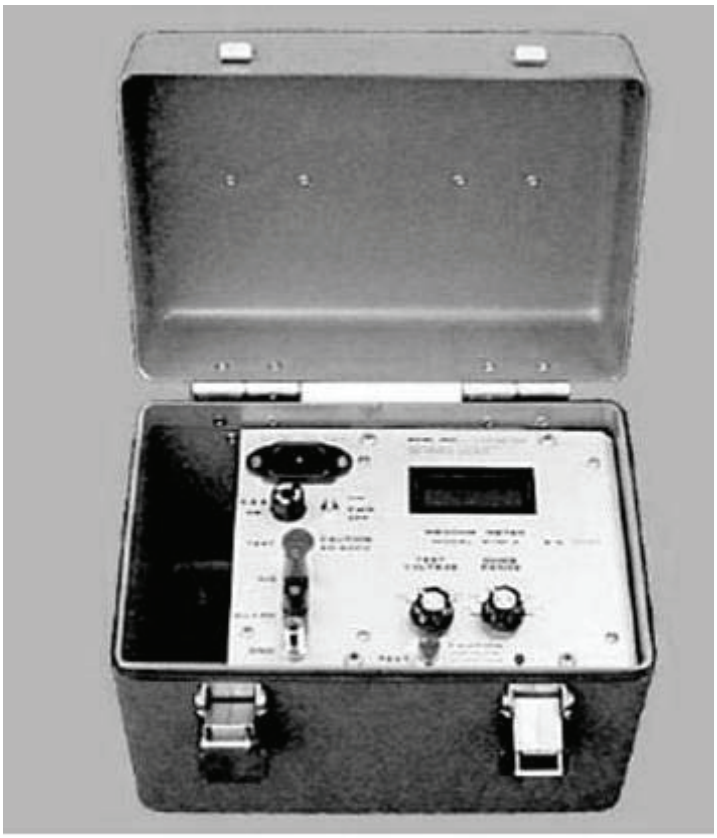
Perform Conductivity Checks

093-94H-1001

Conditions: In an operational environment (OE), given a requirement for surface conductivity testing; a R1M-A Megohmmeter, five-pound block of metal with a contact surface of five square inches of good conducting material, a floor or work surface to be tested for conductivity, TB 385-4, and manufacturer's manual.

Standards: Perform conductivity (surface resistance) checks using the R1M-A Megohmmeter in accordance with manufacturer's manual and TB 385-4.

Performance Steps



R1M-A Megohmmeter

Figure 3-2. R1M-A Megohmmeter

1. Observe all safety precautions, warnings, and hazards.

WARNING: High voltage is used or exposed during the performance of this check. Death on contact may result if personnel fail to observe safety precautions. Reduce output(s) to minimum after each setup within the procedure where applicable.

2. Prepare R1M-AR Megohmmeter for use in accordance with manufacturer's manual.
   a. Check that test leads supplied with the Megohmmeter were available and were in good condition with spring clips and no cracks in the insulation.

Performance Steps

b. Set the TEST VOLTAGE rotary switch to the desired value, from 50 to 500 volts (V) and set the OHMS RANGE switch to the anticipated range.

Note: Although the OHMS RANGE switch is marked from 1 M to 100 G, a 100 percent over range capability is built into this instrument. Note, also, that for resistance values less than one megohm, the only test voltage that should be used is 50 V. No damage will occur if a higher voltage is selected, but the readings may not be accurate.

c. Plug the power cord into a source of AC power (103.5 to 129 V at 50 or 60 Hz) and turn on the POWER toggle switch. Check that the other end is plugged securely into the power input receptacle on the front panel.

3. Perform conductivity (surface resistance) test on floor or work surface in accordance with TB 385-4.
   a. Connect the "SIG" binding post of the Megohmmeter to the facility's certified ground.
   b. Connect the recessed "TEST" connector of the Megohmmeter to a five-pound block of metal with a contact surface of five square inches of good conducting material.
   c. Attach a nonconductive strap or handle to the block (refer to Figure 3-3 of TB 385-4).
   d. Apply voltage by pressing the "TEST" push button while pulling the block along all points of the floor or work surface to be tested.
   e. Observe instrument display and verify that a minimum of 1 (one) megohms of measured surface resistance existed for every kilovolt present in work area.
   f. Adjust range as necessary to correct under range or over range conditions.
4. Document results.
5. Maintain tools and equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, and hazards.	____	____
2. Prepared R1M-AR Megohmmeter for use in accordance with manufacturer's manual.	____	____
3. Performed conductivity (surface resistance) test on floor or work surface in accordance with TB 385-4.	____	____
4. Documented results.	____	____
5. Maintained tools and equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
PPM INSTRUMENTS R1M-AR	TM 9-6695-239-14
TB 385-4	

Perform TMDE Technical Supply Operations (Software)

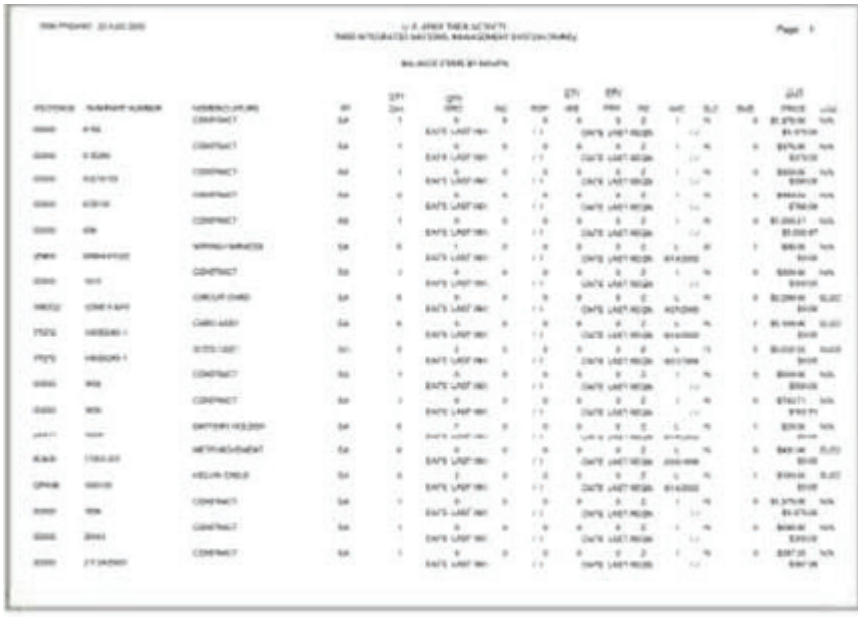
093-94H-1010

Conditions: In an operational environment (OE), with a requirement for technical supply operations; an International Business Machine (IBM) compatible computer loaded with TMDE Integrated Material Management System (TIMMS) software and supply files, and TIMMS User's Guide.

Standards: Perform TMDE technical supply operations using TIMMS in accordance with the TIMMS User's Guide.

Performance Steps

1. Refer to TIMMS User's Guide for detailed procedures.
2. Start TIMMS.
3. Perform Supply Actions.
   a. Perform Issue Item.
   b. Perform Maintain Item.
   c. Perform Receive Item.
   d. Perform Requisition Item.
   e. Perform Turn-in Item.
4. Generate Supply Reports.
   a. Generate Balance Report by NIIN/PN.

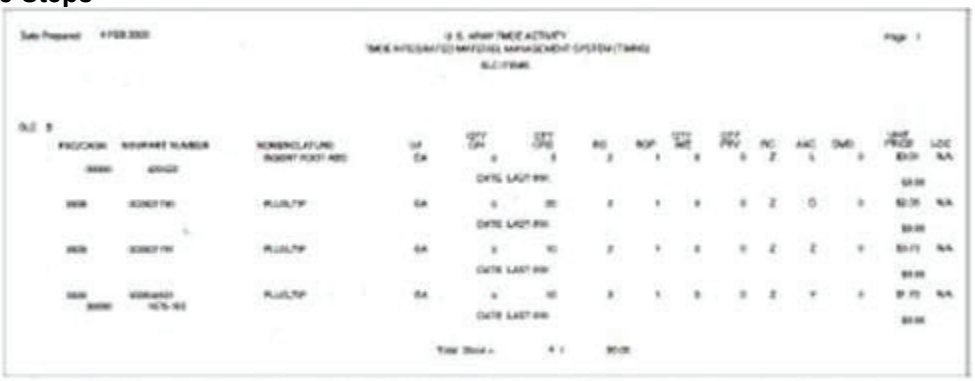


"Balance Items by NIIN/PN" Report

Figure 3-3. Balance Items by NIIN/PN Report

   b. Generate Balance Report by Location.
   c. Generate Balance Report by Demands.
   d. Generate Balance Report by SLC Changes.
   e. Generate Balance Report by Statistics.
   f. Generate Balance Report by Bench Stock.

Performance Steps



"Balance Items by Bench Stock" Report

Figure 3-4. Balance Items by Bench Stock Report

g. Generate Balance Report by Shop Stock.
h. Generate Balance Report by Authorized Stock Level (ASL).
i. Generate Balance Report by Diagnostic Stock Items.
j. Generate Balance Report by Non-demand.
k. Generate Balance Report by Excess Stock.
l. Generate Balance Report by Balance Issues.
m. Generate Balance Report by Total Lines.
n. Generate Canceled Requisitions Reports.
o. Generate Demands Reports by DODAAC.
p. Generate Demands Reports by NIIN/PN.
q. Generate Document Register.
r. Generate List Issues Report.
s. Generate On Order (Bal/Sup) Report.
t. Generate Confirm Receipts Report.
u. Generate Receipt Daily Transactions Report.
v. Generate Requisition Exception Data Report.
w. Generate Unserviceable Items by NIIN Report.
x. Generate Unserviceable Items by PN Report.
y. Generate Unserviceable Items by Location Report.

5. Perform Supply Utilities.

Performance Steps

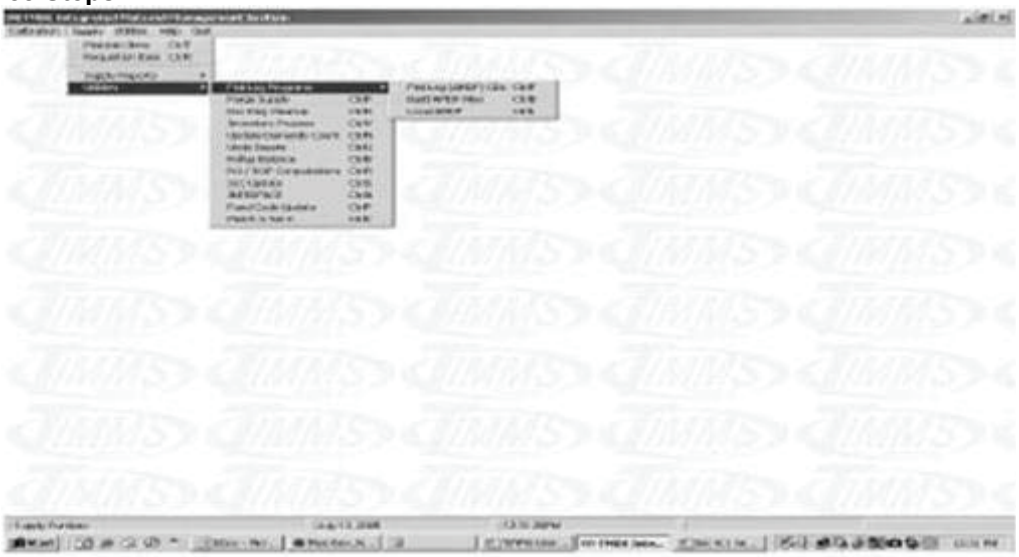


Figure 3-5. Supply Utilities Menu

a. Perform FEDLOG Programs.
b. Perform FEDLOG Army Master Data File (AMDF) CDs.
c. Perform Build AMDF Files.
d. Perform Local AMDF.
e. Perform Document Register Cleanup.
f. Perform Inventory Process.
g. Perform Purge Balance File.
h. Perform Purge Demands File.
i. Perform Purge Requisitions.
j. Perform Update Demands Count.
k. Perform Undo Issues.
l. Perform Rollup Balance.
m. Perform RO/ROP Computation.
n. Perform SLC Update.
o. Perform SLC Update.
p. Perform Fund Code Update.
q. Perform Match G Set K.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Referred to TIMMS User's Guide for detailed procedures.	____	____
2. Started TIMMS.	____	____
3. Performed Supply Actions.	____	____
4. Generated Supply Reports.	____	____
5. Performed Supply Utilities.	____	____

Evaluation Guidance: Use the TIMMS User's Guide as an additional reference for evaluating performance of this task.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
AR 710-2	DA PAM 750-8
DA PAM 710-2-1	
DA PAM 710-2-2	
EM 0007	
TIMMS USERS GUIDE	

Perform Automated Production Control Procedures

093-94H-1020

Conditions: In an operational environment (OE), given test, measurement, and diagnostic equipment (TMDE) requiring support; TMDE Information Maintenance Management System (TIMMS) loaded on an IBM compatible computer, TIMMS User's Guide, DA Pamphlet 750-8, AR 750-43, TB 750-25, TB 43-180, DA Form 7372 (TMDE Calibration and Repair Data), DA Form 1687 (Notice of Delegation of Authority-Receipt for Supplies), and shop standing operating procedures (SOPs).

Standards: Process customer equipment for maintenance, assign a job sequence, appropriate status, and enter the equipment into the TIMMS database to reflect the current status of all open jobs. Prepare TIMMS reports in accordance with the TIMMS User's Guide and shop SOP.

Performance Steps

1. Refer to TIMMS User's Guide for detailed procedures.
2. Start TIMMS.
3. Process incoming TMDE.
    a. Verify that item includes all necessary components.
    b. Verify that all operator and unit level maintenance is performed on item.
    c. Select Calibration from the TIMMS menu bar.
    d. Select method for Production Control.
        (1) Select Production Control-ID/Serial.

Performance Steps

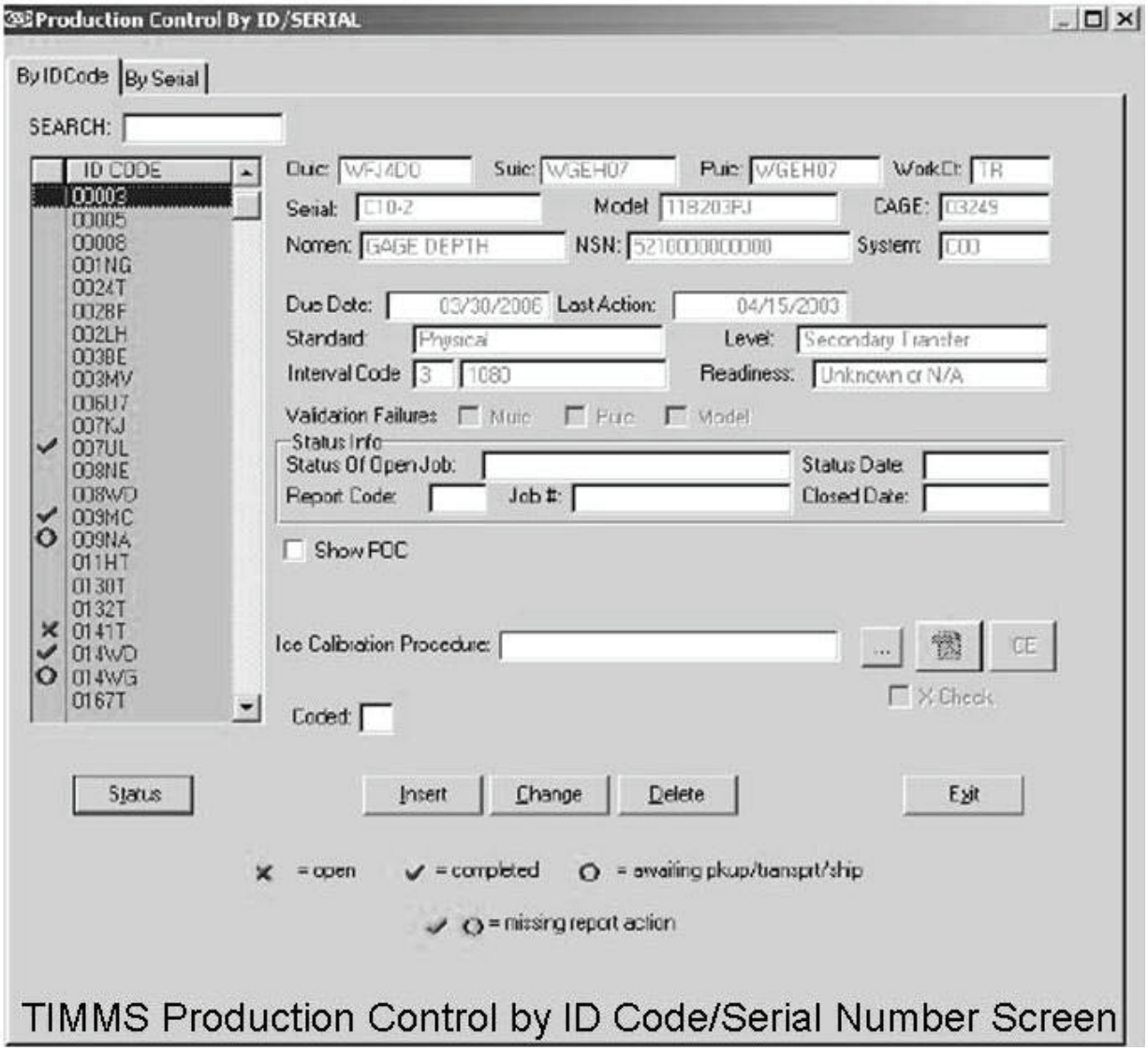


Figure 3-6. TIMMS Production Control by ID Code / Serial Number Screen

(2) Select Instrument Master Record File (IMRF) Browser.
(3) Select Production Control by Scanner.

e. Type, browse, or scan the ID Code or serial number of the item.
(1) Use the 'Insert' button to add the item.
(2) Complete data fields in the 'Update the IMRF File' screen with the 'Changing IMRF Key Fields' screen overlay.
(3) Enter correct Unit Identification Code (UIC) information.
(4) Enter correct ID Code information.
(5) Enter correct Serial Number information.
(6) Enter correct Model Number information by using the 'TB43-180' button.

Note: Using the 'TB43-180' button to search and select the correct model automatically populates the National Stock Number (NSN), nomenclature, interval, and system code of the item to the new IMRF record.

Performance Steps

(7) Complete the information in 'TMDE Catalog Change Submission' screen if item is not found in TB 43-180.

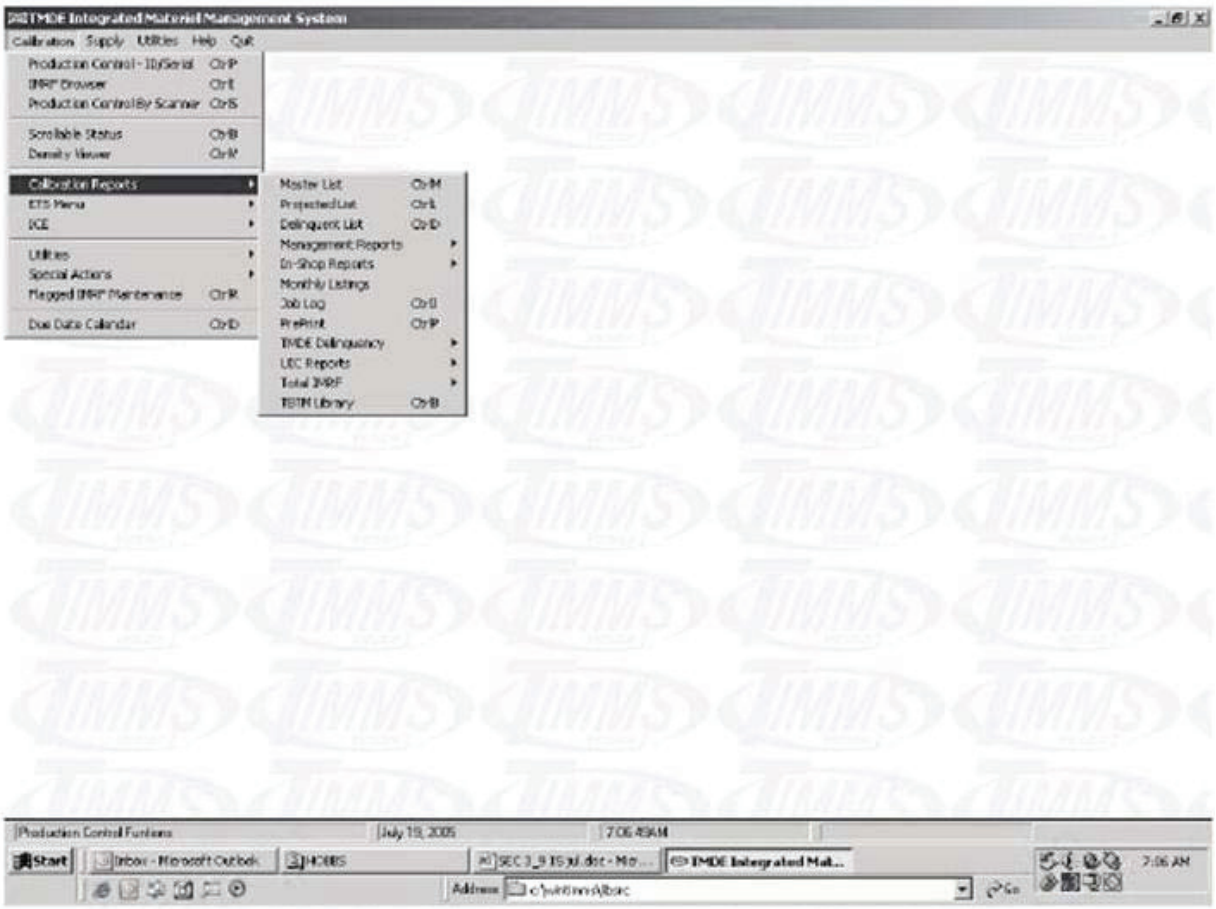
f. Open a job for the item.
(1) Select Calibration from the menu bar.
(2) Select Production Control-ID/Serial.
(3) Type, browse, or scan the ID Code or serial number of the item.
(4) Click the 'Status' button once the correct ID/Serial is highlighted.
(5) Enter initial status code.
(6) Change/update the Priority, Status PUIC, Interval, and/or Tech code if necessary.
(7) Select 'OK' button.

4. Change Status of a Job.
a. Select Calibration from the menu bar.
b. Select Production Control-ID/Serial.
c. Type, browse, or scan the ID Code or serial number of the item.
d. Click the 'Status' button once the correct ID/Serial is highlighted.
e. Select 'Change Status' button on the 'Browse the Status File' screen.
f. Use the 'Insert' or 'Change' buttons on the 'Status Trail' screen to insert a new or change an existing status.
g. Complete the data fields on the 'Adding (New)' or 'Changing…'screen.
(1) Verify PUIC.
(2) Enter correct Status Date.
(3) Enter correct Status.
(4) Enter technician's initials.
(5) Enter Calibration Hours and/or Repair Hours if status is 'M'.
(6) Enter evacuation information in the appropriate fields if status is set to 'S' or 'T'.
(a) Enter the EVAC TO and FROM PUICs in the appropriate fields.
(b) Select the correct evacuation code for the item.
(c) Click the 'Done' button.
(7) Click 'OK'.
h. Select the 'DA Form 7372' button to preview/print DA Form 7372 or generate .pdf file of the DA Form 7372.

5. Perform Report Action on a Job.
a. Select 'Report Action' button from the 'Browse the Status File' screen.
b. Verify interval.
c. Verify calibration condition code.
d. Verify repair code, if necessary.
e. Verify performance code.
f. Verify the report code if applicable.
g. Enter information in the 'Adjusted', 'Replaced', and 'Remarks' fields if applicable.
h. Click the 'OK' button.

6. Prepare Master List.

Performance Steps



TIMMS Production Control Reports Screen

Figure 3-7. TIMMS Production Control Reports Screen

7. Prepare Projected List.
8. Prepare Delinquent Report.
9. Prepare Management Report.
    a. Execute Weekly Collection.
    b. Execute Management Report Print.
    c. Execute Management Report Rollup.
10. Prepare In-Shop Reports.
    a. Prepare In Shop List.
    b. Prepare Awaiting Pickup List.
11. Prepare Job Log.
12. Prepare TMDE Delinquency Report.
13. Prepare UIC Reports.
    a. Prepare UIC Report by Scheduler.
    b. Prepare UIC Report by Dist. Code.
14. Prepare Total IMRF Reports.
    a. Prepare Total IMRF by Model.
    b. Prepare Total IMRF by Serial.

Performance Steps

c. Prepare Total IMRF by Owner.
d. Prepare Total IMRF by Scheduler.
e. Prepare Total IMRF by Performer.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Referred to TIMMS User's Guide for detailed procedures.	____	____
2. Started TIMMS.	____	____
3. Processed incoming TMDE.	____	____
4. Changed Status of a Job.	____	____
5. Performed Report Action on a Job.	____	____
6. Prepared Master List.	____	____
7. Prepared Projected List.	____	____
8. Prepared Delinquent Report.	____	____
9. Prepared Management Report.	____	____
10. Prepared In-Shop Reports.	____	____
11. Prepared Job Log.	____	____
12. Prepared TMDE Delinquency Report.	____	____
13. Prepared UIC Reports.	____	____
14. Prepared Total IMRF Reports.	____	____

Evaluation Guidance: Use the TIMMS User's Guide as an additional reference for evaluating performance of this task.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AR 750-1	
AR 750-43	
DA FORM 1687	
DA FORM 7372	
DA PAM 750-8	
TB 43-180	
TB 750-25	
TIMMS USERS GUIDE	

Perform Classification Inspection of TMDE

093-94H-1030

Conditions: In an operational environment (OE), given an item of TMDE requiring condition coding; and the following forms and publications: AR 710-2, AR 725-50, AR 750-1, DA Form 7372 (TMDE Calibration and Repair Data), DA Form 2404 (Equipment Inspection and Maintenance Worksheet), DD Form 1574 (Serviceable Tag-Materiel), DD Form 1577 (Unserviceable (Condemned) Tag - Materiel), DD Form 1577-2 (Unserviceable (Reparable) Tag - Materiel, SF 368 (Product Quality Deficiency Report), DA Pamphlet 708-2, DA Pamphlet 710-2-1, DA Pamphlet 710-2-2, DA Pamphlet 750-8, DA Pamphlet 738-751, FEDLOG, applicable TB 43-0002-series publication, TB 11-6625-3263-25, and applicable technical manuals.

Standards: Accomplish the technical inspection (TI) of the TMDE item in accordance with appropriate manufacturer/service manual and note all discrepancies. Assign proper condition code based on the results of the TI in accordance with AR 725-50. Complete all forms correctly in accordance with DA Pamphlet 750-8 and DA Pamphlet 738-751.

Performance Steps

1. Research item using FEDLOG for all applicable codes and determine proper disposition for unserviceable and excess items.
2. Perform technical inspections (TI) on item.
3. Determine if an unserviceable item is economically or uneconomically repairable by considering the following factors:
   a. The cost of replacing the item as opposed to the cost of repair.
   b. The value (in terms of service life) that will be restored to the item if it is repaired.
   c. The value restored to the item through repair in comparison to the probable maintenance cost of a new item.
4. Determine the maintenance required to restore unserviceable, economically repairable equipment to serviceable condition.
5. Determine the availability of replacement parts and analyze the shop workload to determine the unit's capability to perform the required repairs.
6. Process item for repair if item meets repair criteria.
7. Evacuate the item to a higher echelon for repair, if the repair requirement exceeds the established repair time limits.
8. Evacuate the item to designated facilities of the same or higher category of maintenance for repair, if the repair is beyond authorized capability and capacity.
9. Assign proper condition code to item for return to customer.
10. Complete all necessary forms and paperwork.
    a. Complete DA Form 7372 with condition code stamp.
    b. Complete DA Form 2404 with condition code stamp.
    c. Complete DA Form 5990-E (Maintenance Request) with condition code stamp.
    d. Complete appropriate materiel condition code tag with condition code stamp.
    e. Provide customer with sufficient copies of all forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Researched item using FEDLOG for all applicable codes and determined proper disposition for unserviceable and excess items.	____	____
2. Performed technical inspections (TI) on item.	____	____
3. Determined if an unserviceable item was economically or uneconomically repairable.	____	____
4. Determined the maintenance required to restore unserviceable, economically repairable equipment to serviceable condition.	____	____
5. Determined the availability of replacement parts and analyzed the shop workload to determine the unit's capability to perform the required repairs.	____	____
6. Processed item for repair if item met repair criteria.	____	____
7. Evacuated the item to a higher echelon for repair, if the repair requirement exceeded the established repair time limits.	____	____
8. Evacuated the item to designated facilities of the same or higher category of maintenance for repair, if the repair was beyond authorized capability and capacity.	____	____
9. Assigned proper condition code to item for return to customer.	____	____
10. Completed all necessary forms and paperwork.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AR 710-2	
AR 725-50	
AR 750-1	
DA FORM 2404	
DA FORM 5990-E	
DA FORM 7372	
DA PAM 708-2	
DA PAM 710-2-1	
DA PAM 710-2-2	
DA PAM 738-751	
DA PAM 750-8	
DD FORM 1574	
DD FORM 1577	
DD FORM 1577-2	
EM 0007	
SF 368	
TB 11-6625-3263-25	
TB 43-0002-SERIES	

Subject Area 2: Direct Current (DC) and Low Frequency

Operate Work station Controller

093-94H-1100

Conditions: In an operational environment (OE), with a requirement to perform a calibration procedure on an item of TMDE using the Integrated Calibration Environment (ICE); a work station controller, access to United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) website, media storage device, TB 43-180, TB 385-4, TB 750-25, and USATA Master List.

Standards: Operate Work station Controller in accordance with ICE calibration procedure to calibrate the equipment.

Performance Steps

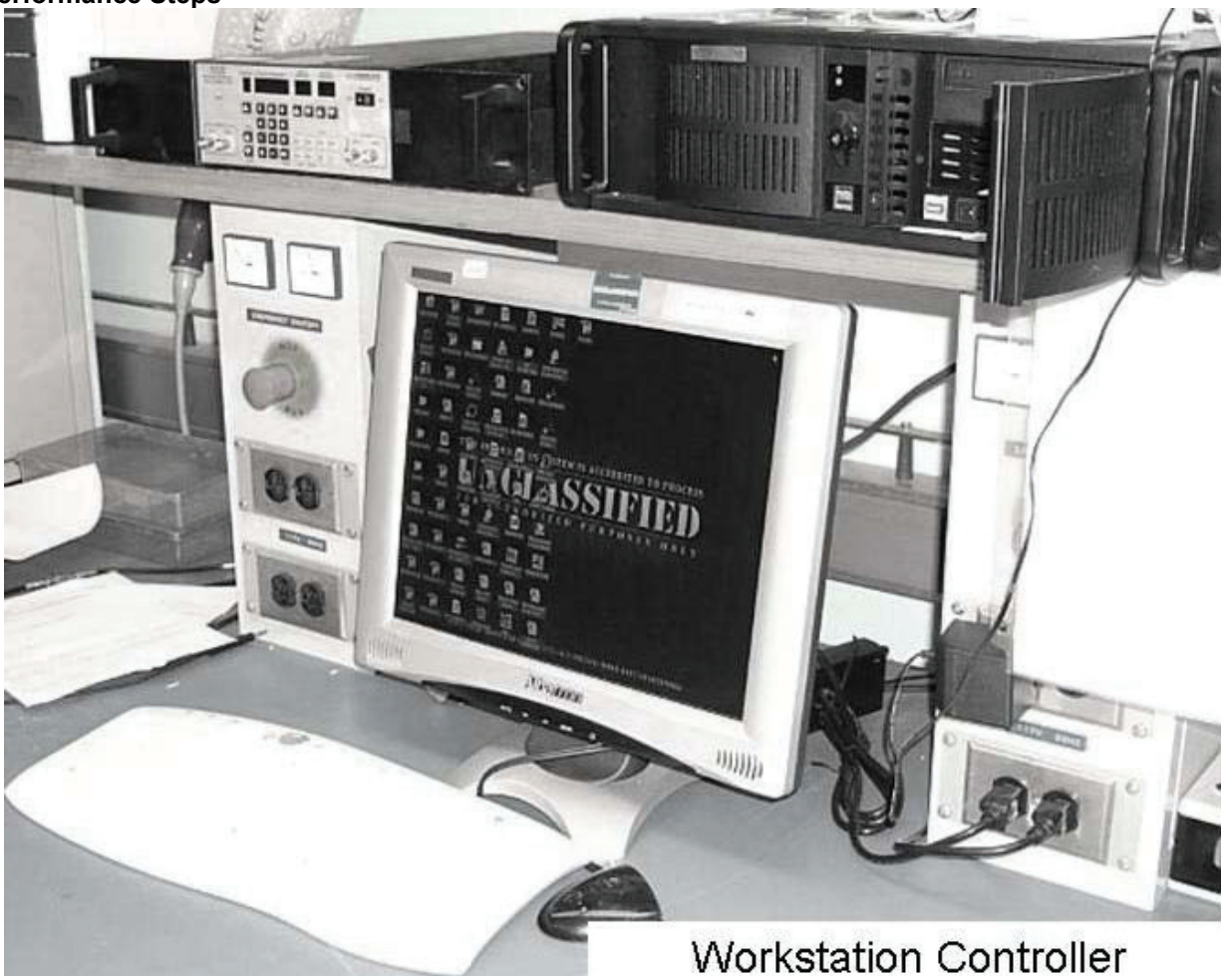


Figure 3-8. Workstation Controller

1. Determine correct Integrated Calibration Environment (ICE) procedure for use in accordance with TB 43-180.
2. Update ICE procedure as necessary in accordance with USATA Calibration Procedure Master List.
   a. Download update from USATA website onto media storage device or system hard drive.
   b. Extract file into temporary directory if necessary.
   c. Execute program to install automatically.

Performance Steps

3. Enter ICE menu from work station controller desktop or start menu.
4. Navigate through ICE menu to select appropriate calibration procedure.
5. Setup hardware manager for prime instrument (if necessary).
6. Observe all safety precautions, warnings, and hazards.
7. Follow onscreen instructions for equipment required.
   a. Connect GP-IB cables from unit under test and calibration standards to appropriate port(s) on workstation controller.
   b. Set addresses on equipment as appropriate for calibration procedure and ICE procedure being used.
8. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Determined correct Integrated Calibration Environment (ICE) procedure for use in accordance with TB 43-180.	____	____
2. Updated ICE procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Entered ICE menu from work station controller desktop or start menu.	____	____
4. Navigated through ICE menu to select appropriate calibration procedure.	____	____
5. Setup hardware manager for prime instrument (if necessary).	____	____
6. Observed all safety precautions, warnings, and hazards.	____	____
7. Followed onscreen instructions for equipment required. a. Connected GP-IB cables from unit under test and calibration standards to appropriate port(s) on workstation controller. b. Set addresses on equipment as appropriate for calibration procedure and ICE procedure being used.	____	____
8. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
AR 750-1	DA PAM 750-8
TB 385-4	TM 9-6695-239-14
TB 43-180	
TB 750-25	
USATA MASTER LIST	

Operate Core Work station

093-94H-1101

Conditions: In an operational environment (OE), with a requirement to operate the Core Workstation; a 5720A/CT Calibrator, 5725A/CT Amplifier, and 3458A Multimeter; cables, connectors, TB 385-4, and Manufacturer's Operator Manuals for 5720A/CT, 5725A/CT, and 3458A.

Standards: Operate the Core Workstation in accordance with Manufacturer's Operator Manuals. Observe all safety requirements in accordance with TB 385-4.

Performance Steps

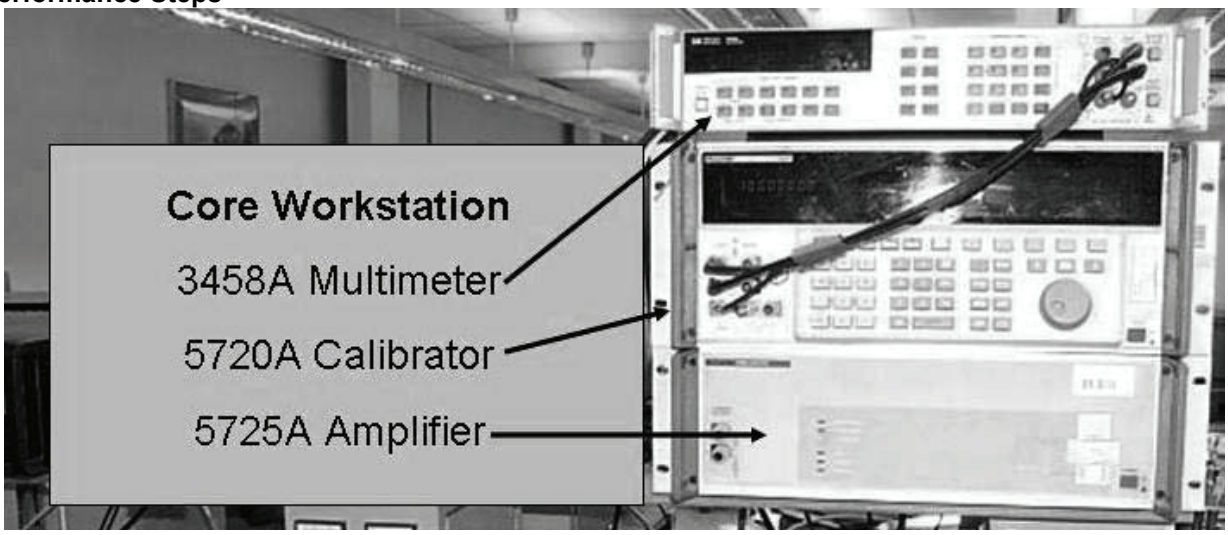


Figure 3-9. Core Workstation Components

1. Observe all safety precautions, warnings, hazards, and notes.
2. Operate the Core workstation as follows using the 3458A multimeter as the unit under test (UUT).
   a. Set up equipment to produce and measure DC Voltage.
   b. Use Error Mode of Calibrator and output adjustment controls to achieve a reading on UUT equal to original entry on calibrator.
   c. Set up equipment to produce and measure AC Voltage.
   d. Use Error Mode of Calibrator and output adjustment controls to achieve a reading on UUT equal to original entry on calibrator.
   e. Set up equipment to produce and measure DC Current.
   f. Use Error Mode of Calibrator and output adjustment controls to achieve a reading on UUT equal to original entry on calibrator.
   g. Set up equipment to produce and measure AC Current.
   h. Use Error Mode of Calibrator and output adjustment controls to achieve a reading on UUT equal to original entry on calibrator.
   i. Set up equipment to produce and measure Resistance.
   j. Use Error Mode of Calibrator and output adjustment controls to achieve a reading on the Control Display equal to the reading on the UUT.
   k. Set up equipment to produce and measure Wideband AC Voltage.
3. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____

Performance Measures	GO	NO-GO
2. Operated the Core workstation using the 3458A as the unit under test (UUT).	____	____
3. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AGILENT 3458A	TM 9-6695-239-14
FLUKE 5700A/5720A	
FLUKE 5725A	
TB 385-4	

Operate Impedance Measuring System

093-94H-1102

Conditions: In an operational environment (OE), with a requirement to operate an impedance measuring system; a 6425B Precision Component Analyzer, a standard capacitor, Instruction Manual for 6425B Precision Component Analyzer, and TB 385-4.

Standards: Operate impedance measuring system in accordance with Manufacturer's Instruction Manual. Observe all safety requirements in accordance with TB 385-4.

Performance Steps

Wayne-Kerr model 6425B
Impedance Measuring System (MIS-45837)

Figure 3-10. Wayne-Kerr 6425B

Note: Perform all steps in accordance with manufacturer's manual (Wayne-Kerr model 6425B Precision Component Analyzer).

1. Observe all safety precautions, warnings, hazards, and notes.
2. Operate the Impedance Measuring System as follows using a standard capacitor as the unit under test:
   a. Set up equipment and perform trimming operation.
   b. Set up equipment to perform capacitance measurement on standard capacitor.
   c. Perform capacitance measurement on standard capacitor.
3. De-energize and disconnect all equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Operated the Impedance Measuring System as follows using a standard capacitor as the unit under test:	____	____

Performance Measures	GO	NO-GO
3. De-energized and disconnected all equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
TB 385-4	DA PAM 750-8
WAYNE KERR ELECTRONICS	TM 9-6695-239-14

Perform Cross Checks

093-94H-1120

Conditions: In an operational environment (OE), with calibration standards requiring Cross Checks; a 5720A Electrical Calibrator, 5725A Amplifier, 3458A Multimeter; cables and connectors, TB 9-4931-537-24, TB 43-180, TB 385-4; TB 750-25; United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List and facility Cross Checks SOP.

Standards: Perform Cross Checks of measurement standards in accordance with TB 9-4931-537-24. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

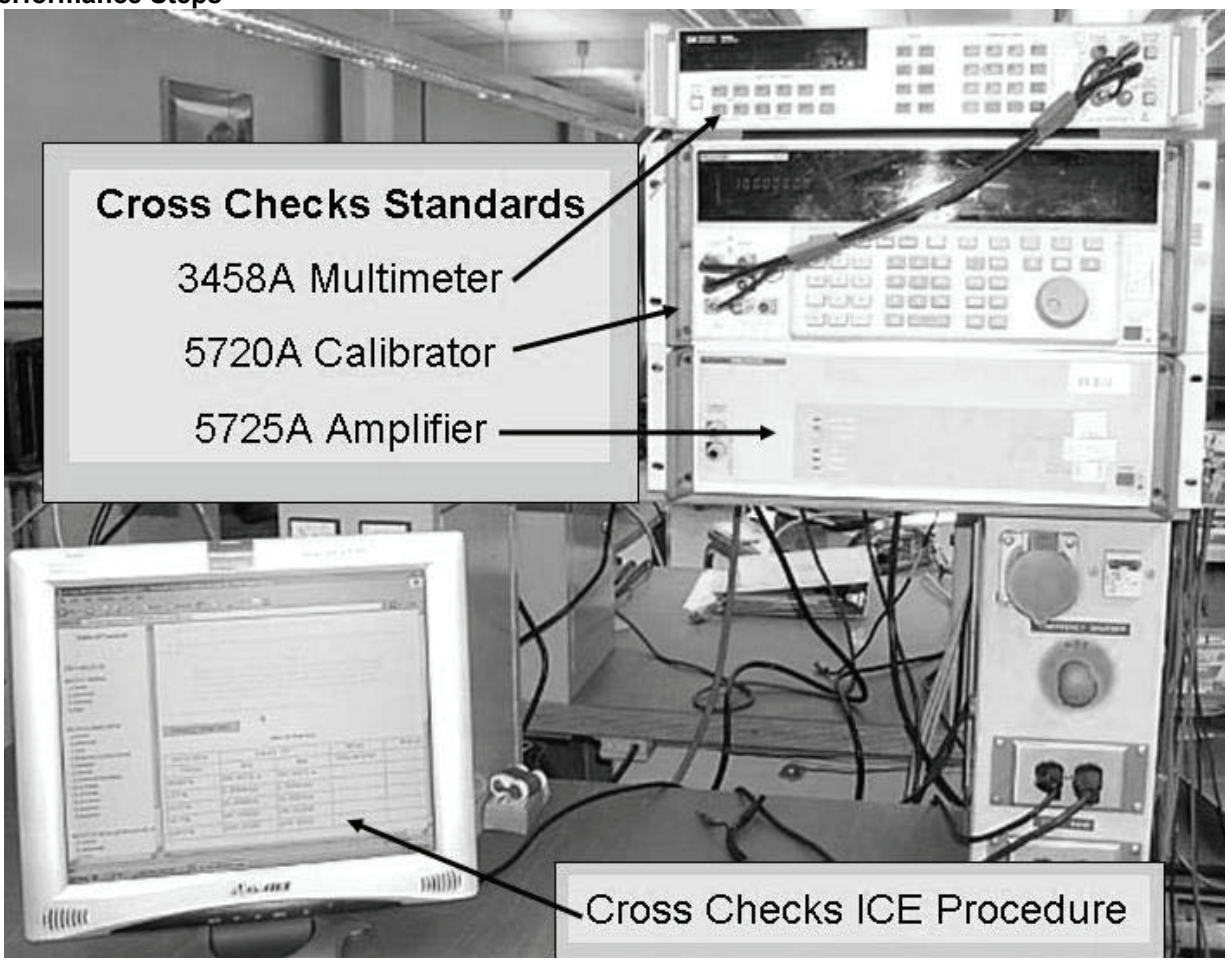


Figure 3-11. Cross Checks Components

1. Identify correct procedure to be used in accordance with TB 43-180.
2. Update the procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.
4. Review the facility standing operating procedures for cross checks.
5. Perform cross checks of equipment in accordance with TB 9-4931-537-24 and facility cross checks SOP.
    a. Identify when standards are to be cross checked.

Performance Steps

b. Identify correct standards to be cross checked.
c. Cross check appropriate ranges and parameters of equipment.
d. Complete the cross checks data tables and forms and ensure all information is accurate.
e. Follow proper procedures if a standard is inoperable or fails cross checks.
f. File and distribute copies of cross checks records as required.

6. De-energize and disconnect equipment as appropriate.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct procedure to be used in accordance with TB 43-180.	____	____
2. Updated procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Reviewed the facility standing operating procedures for cross checks.	____	____
5. Performed cross checks of equipment in accordance with TB 9-4931-537-24 and facility cross checks SOP. a. Identified when standards are to be cross checked. b. Identified correct standards to be cross checked. c. Cross checked appropriate ranges and parameters of equipment. d. Completed the cross checks data tables and forms ensuring all information was accurate. e. Followed proper procedures when a standard was inoperable or failed cross checks. f. Filed and distributed copies of cross checks records as required.	____	____
6. De-energized and disconnected equipment as appropriate.	____	____

Evaluation Guidance: Use TB 9-4931-537-24 as a guide to verify that all steps in the cross-check process are performed in accordance with the proper procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
TB 385-4	AR 750-1
TB 43-180	TM 9-6695-239-14
TB 750-25	
TB 9-4931-537-24	

Operate Time/Frequency Workstation

093-94H-1125

Conditions: In an operational environment (OE), with a requirement to operate a Time/Frequency Workstation; an ET6000-75 GPS station, external 10 MHz signal source, oscilloscope, all necessary cables, adaptors, and connectors, manufacturer's and technical manuals, and TB 385-4.

Standards: Operate Time/Frequency Workstation in accordance with manufacturer's and technical manuals. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

Time/Frequency Workstation (Front Panel View)

Time/Frequency Workstation (Rear Panel View)

Figure 3-12. Time/Frequency Workstation

1. Observe all safety precautions, warnings, hazards, and notes.
2. Connect the power cable, the antenna, and antenna cable.
3. Apply power to the unit.
4. Set the SET MODE to "AUTO" if it is not already in the "AUTO" mode.

Note: When satellites are acquired, the TRACKING LED will illuminate. Once the unit has accomplished its position averaging, the LOCKED LED will illuminate.

Performance Steps

5. Press the MENU keyboard switch until the External Frequency Measurement Menu Screen is displayed and contains the following choices:

```
--------------------------------------------------------------------------
EXT   FRQ:+0000E-14   /     +0000E+00     SEC   *

1>ENTER FRQ                    <2>ENABLE<3>DISABLE
--------------------------------------------------------------------------
```

6. Connect a 10 MHz signal from signal source to connector J10 using RF cable.
7. Press keyboard button "1" followed by 10000000 to input the frequency to measure (10 MHz).
8. Press keyboard button "2" to ENABLE the external frequency measurement option.

Note: If the unit is locked, the measurement count (once per second) will start to increment. It will display measurements in parts to E-09, E-12, or E-14. If the input offset/measurement is greater than 1x10-5 or if the input signal contains noise, "TOO HIGH" will be displayed.

9. Observe external frequency offset measurement on display screen.
10. Press keyboard button "3" to disable external frequency measurement.
11. Connect rear panel connector J7 to an oscilloscope using RF cable to acquire and observe the 10 MHz signal.
12. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Antenna, antenna cable, and power cable may be connected and power applied to the workstation prior to evaluation in order to eliminate the time necessary to track and lock satellites.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Connected the power cable, the antenna, and antenna cable.	____	____
3. Applied power to the unit.	____	____
4. Set the SET MODE to "AUTO" if it was not already in the "AUTO" mode.	____	____
5. Pressed the MENU keyboard switch until the External Frequency Measurement Menu Screen is displayed.	____	____
6. Connected a 10 MHz signal from signal source to connector J10 using RF cable.	____	____
7. Pressed keyboard button "1" followed by 10000000 to input the frequency to measure (10 MHz).	____	____
8. Pressed keyboard button "2" to ENABLE the external frequency measurement option.	____	____
9. Observed external frequency measurement offset measurement on display screen.	____	____
10. Pressed keyboard button "3" to disable external frequency measurement.	____	____
11. Connected rear panel connector J7 to an oscilloscope using RF cable to acquire and observe the 10 MHz signal.	____	____

Performance Measures	GO	NO-GO
12. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
ET6000-SERIES	TM 9-6695-239-14
TB 385-4	
TM 11-6625-3165-14	
TM 43-6625-915-12	

Repair Frequency Counter
093-94H-1130

Conditions: In an operational environment (OE), given a faulty frequency counter, a signal generator, test equipment as needed (multimeter, oscilloscope, spectrum analyzer, and so on), electrician's tool kit, frequency counter manufacturer's manual, and TB 385-4.

Standards: Repair frequency counter in accordance with manufacturer's manual. Observe all safety requirements in accordance with TB 385-4.

Performance Steps

NOTE:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the frequency counter for any physical defects.
3. Read and follow the operator, maintenance, and repair instructions given in technical reference.
4. Set up necessary support equipment to repair the frequency counter.
5. Perform operational circuit checks to sectionalize the malfunction.
6. Perform a schematic analysis and functional tests to localize the malfunction.
7. Perform resistance, continuity, and power distribution tests to isolate the malfunction.
8. Repair/replace faulty component.
9. Verify repair.
10. De-energize and disconnect equipment.
11. Complete proper maintenance forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the frequency counter for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in technical reference.	____	____
4. Set up necessary support equipment to repair the frequency counter.	____	____

Performance Measures	GO	NO-GO
5. Performed operational circuit checks to sectionalize the malfunction.	____	____
6. Performed a schematic analysis and functional tests to localize the malfunction.	____	____
7. Performed resistance, continuity, and power distribution tests to isolate the malfunction.	____	____
8. Repaired/replaced faulty component.	____	____
9. Verified repair.	____	____
10. De-energized and disconnected equipment.	____	____
11. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
HEWLETT-PACKARD 5345A	AR 750-1
TB 385-4	DA PAM 750-8
TM 9-4931-509-34P	MANUFACTURER'S MANUAL
	TB 750-25
	TM 9-6695-239-14

Calibrate Frequency Counter

093-94H-1131

Conditions: In an operational environment (OE), given model PM6681/656 frequency counter requiring calibration; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2331-24; TB 43-180; TB 385-4, TB 750-25; and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate frequency counter in accordance with TB 43-180 and calibration procedure. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Fluke PM 6681 Frequency Counter

Figure 3-13. Fluke PM 6681

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Note: All paragraphs referred to in steps 4 through 11 are found in TB 9-6625-2331-24.

4. Perform preliminary Instructions in accordance with paragraph 6.
5. Perform equipment setup in accordance with paragraph 7.
6. Perform time base stability performance check and make necessary adjustments in accordance with paragraph 8.
7. Perform sensitivity performance checks in accordance with paragraph 9.
8. Perform volts maximum/minimum performance check in accordance with paragraph 10.
9. Perform Trig Level A&B Outputs performance check in accordance with paragraph 11.

Performance Steps

Note: Do not perform power supply check if all other parameters are within tolerance. If any of the power supply checks are out of tolerance perform the entire calibration adjustment procedures in the manufacturer's service manual for this instrument.

10. Perform power supply check if necessary and make necessary adjustments in accordance with paragraph 12.
11. Perform final procedure in accordance with paragraph 13.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary instructions.	____	____
5. Performed equipment setup.	____	____
6. Performed time base stability performance check and made necessary adjustments.	____	____
7. Performed sensitivity performance checks.	____	____
8. Performed volts maximum/minimum performance check.	____	____
9. Performed Trig Level A&B Outputs performance check.	____	____
10. Performed power supply check if necessary and made necessary adjustments.	____	____
11. Performed final procedure.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
ET6000-SERIES	
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6625-2331-24	
USATA MASTER LIST	

Repair Multimeter
093-94H-1140

Conditions: In an operational environment (OE), given a faulty multimeter, core workstation, test equipment as needed (multimeter, oscilloscope, and so on), electrician's tool kit, technical manuals, manufacturer's manual, and TB 385-4.

Standards: Repair the multimeter in accordance with multimeter manufacturer's and/or technical manual. Observe safety requirements in accordance with TB 385-4.

Performance Steps

NOTES:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the multimeter for any physical defects.

> ***Note: Determine the appropriate maintenance publication (either technical manual or manufacturer's manual) for the particular model requiring repair. Follow the detailed repair procedures provided in the maintenance publication. Steps 3 thru 10 are general repair procedures for use if no detailed procedures are available.***

3. Read and follow the operator, maintenance, and repair instructions given in the applicable technical reference.
4. Set up support equipment necessary to repair the multimeter.
5. Perform operational circuit checks to sectionalize the malfunction.
6. Perform schematic analysis and functional tests to localize the malfunction.
7. Perform resistance, continuity, and power distribution tests to isolate the malfunction.
8. Repair/replace faulty component(s).
9. Verify repair.
10. De-energize and disconnect equipment.
11. Complete proper maintenance forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____

Performance Measures	GO	NO-GO
2. Visually inspected the faulty multimeter for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in technical reference.	____	____
4. Set up necessary support equipment to repair the multimeter.	____	____
5. Performed operational circuit checks to sectionalize the malfunction.	____	____
6. Performed a schematic analysis and functional tests to localize the malfunction.	____	____
7. Performed resistance, continuity, and power distribution tests to isolate the malfunction.	____	____
8. Repaired/replaced faulty component(s).	____	____
9. Verified repair.	____	____
10. De-energized and disconnected all the equipment.	____	____
11. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
MANUFACTURER'S MANUAL	AR 750-1
TB 385-4	AR 750-43
	DA PAM 750-8
	EM 0007
	TB 43-180
	TB 750-25
	TM 9-6695-239-14

Calibrate Multimeter

093-94H-1141

Conditions: In an operational environment (OE), given a multimeter requiring calibration; TB 9-6625-2190-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2190-24; TB 43-180; TB 385-4, TB 750-25; and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate the multimeter in accordance with TB 43-180 and TB 9-6625-2190-24. Observe all safety requirements in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Simpson 260

AN/PSM-45A

(Fluke 27/FM)

Figure 3-14. Multimeter Examples

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Note: Paragraphs referred to in steps 4 through 10 are found in TB 9-6625-2190-24.

Performance Steps

4. Perform preliminary instructions in accordance with paragraph 6.
5. Perform equipment setup in accordance with paragraph 7.
6. Perform DC voltage performance check, and make necessary adjustments in accordance with paragraph 8.
7. Perform DC current performance check in accordance with paragraph 9.
8. Performed AC voltage performance check, and make necessary adjustments in accordance with paragraph 10.
9. Perform resistance performance check in accordance with paragraph 11.
10. Perform final procedure in accordance with paragraph 12.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary instructions.	____	____
5. Performed equipment setup.	____	____
6. Performed DC voltage performance check, and made adjustments if necessary.	____	____
7. Performed DC current performance check.	____	____
8. Performed AC voltage performance check, and made adjustments if necessary.	____	____
9. Performed resistance performance check.	____	____
10. Performed final procedure.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6625-2190-24	
USATA MASTER LIST	

Calibrate Resistance Decade

093-94H-1150

Conditions: In an operational environment, given a resistance decade requiring calibration; TB 9-6625-2153-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2153-24; TB 385-4; TB 43-180; TB 750-25; and U.S. Army TMDE Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate resistance decade in accordance with TB 43-180 and TB 9-6625-2153-24. Observe all safety precautions IAW TB 385-4. Complete the required DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration) or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) IAW TB 750-25.

Performance Steps

Figure 3-15. Resistance Decade

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Note: All paragraphs referenced in steps 4 thru 8 are found in TB 9-6625-2153-24.

4. Perform Preliminary instructions IAW paragraph 6.
5. Perform Equipment setup IAW paragraph 7.
6. Perform Resistance Accuracy check IAW paragraph 8.

Performance Steps

7. Complete and file a Calibration Test Report if appropriate, IAW TB 9-6625-2153-24.
8. Perform Final procedure IAW paragraph 9.
9. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed calibration procedure IAW TB 9-6625-2153-24.	____	____
5. Disconnected and maintained equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed IAW the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	AR 750-1
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6625-2153-24	
USATA MASTER LIST	

Repair Simplified Test Equipment (STE)

093-94H-1170

Conditions: In an operational environment (OE), given a faulty item of simplified test equipment (Simplified Test Equipment for Internal Combustion Engines, Reprogrammable (STE/ICE-R), Test Set STE-M1/FVS, Contact Test Set (CTS) AN/PSM-80 version 2 or 3, Soldier's Portable On-System Repair Tool (SPORT) AN/PSM-95 with ICE kit, or SPORT/Maintenance Support Device (SPORT/MSD) with ICE kit), an electrician's tool kit, diagnostic circuit boards, and appropriate technical references.

Note: You may be required to pick-up or lift bulky or heavy equipment.

Standards: Repair faulty item of Simplified Test Equipment according to the appropriate technical reference(s). Observe all safety precautions in accordance with TB 385-4.

Performance Steps

Figure 3-16. Maintenance Support Device

Performance Steps

The STE/ICE-R set consists of:

A. Vehicle Test Meter (VTM)

B. Transducer Kit (TK)

C. Cable Assemblies

D. Transit Case

E. Test Probe Kit

F. Technical Manual

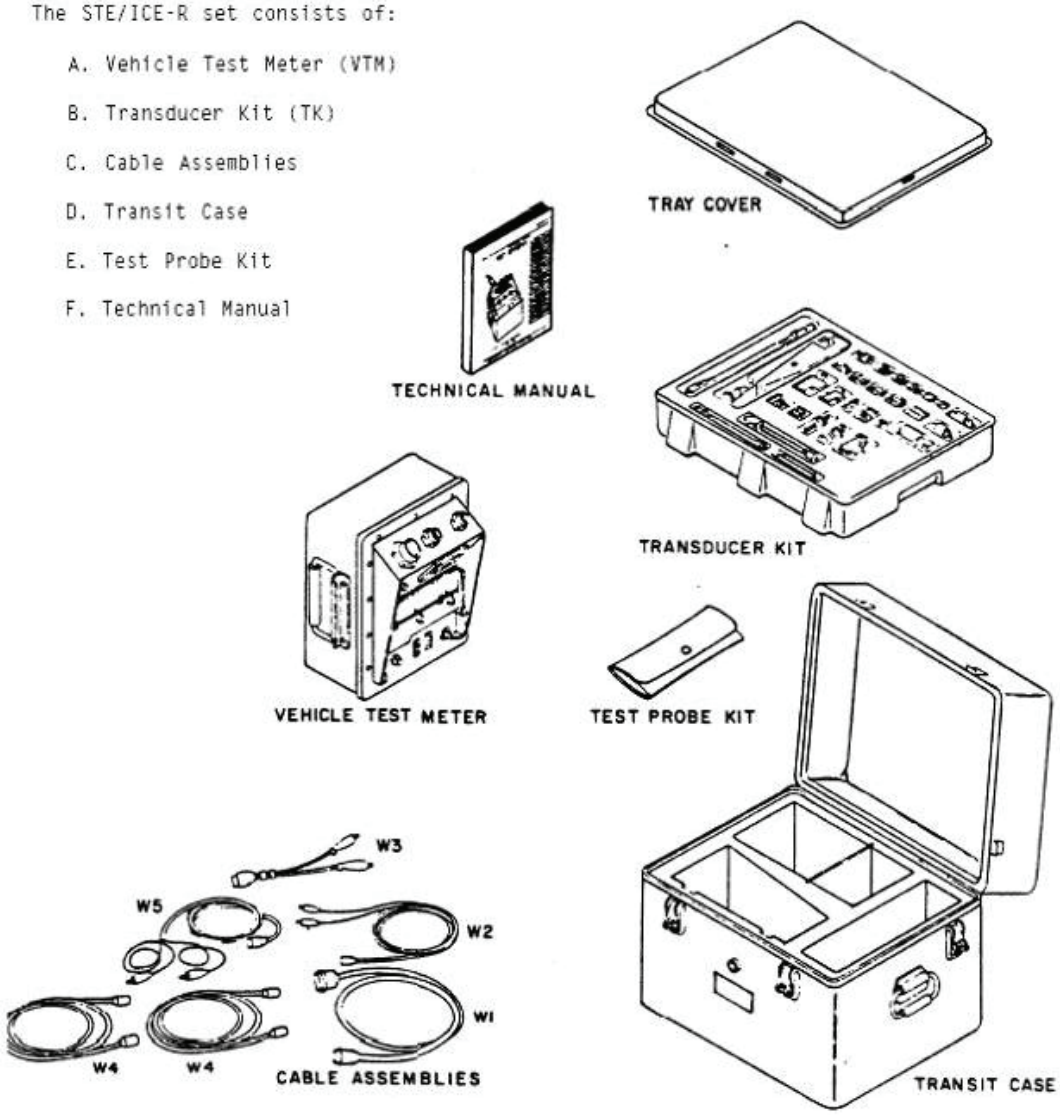


Figure 3-17. STE/ICE-R Set

Performance Steps

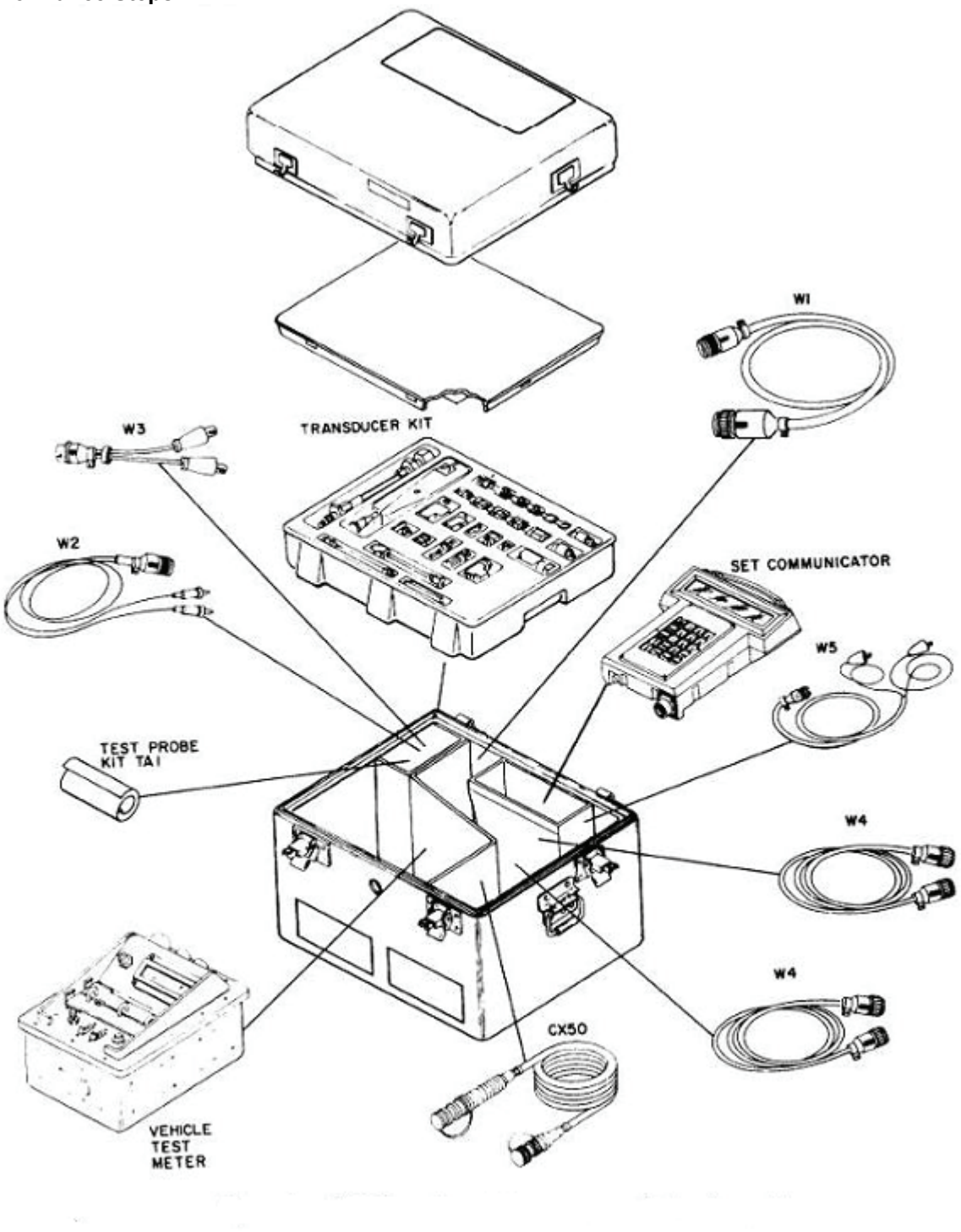


Figure 3-18. VTM/Transducer Kit/Set Communicator Assembly

Performance Steps

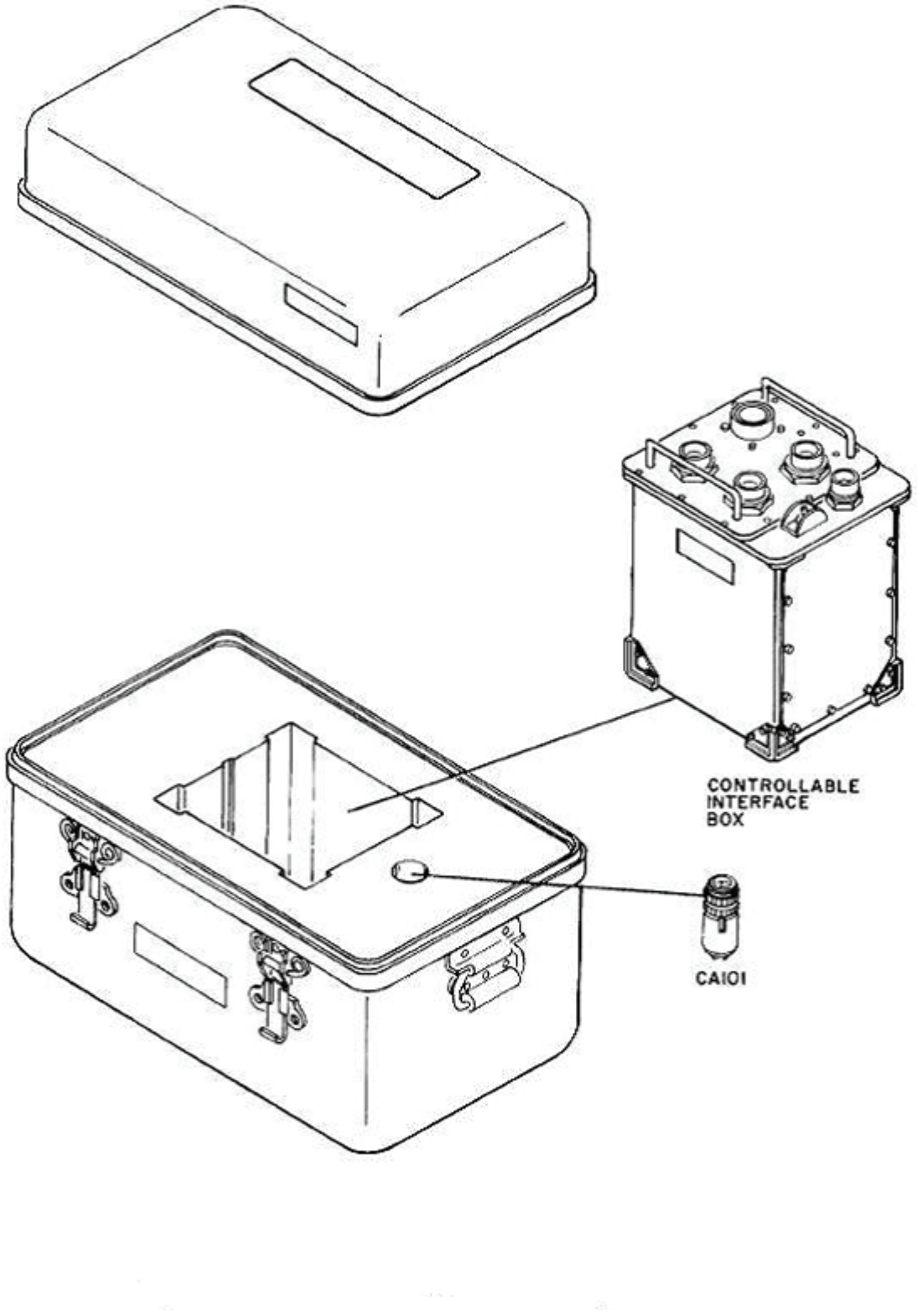


Figure 3-19. Controllable Interface Assembly

Performance Steps

Figure 3-20. Components of the SPORT

NOTE:

-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Visually inspect the simplified test equipment (STE) for any physical defects.
2. Read and follow the preliminary instructions given in technical reference.
3. Set up the equipment needed to perform troubleshooting.
4. Perform self-test/operations check of STE.

Performance Steps

5. Perform troubleshooting steps/fault isolation as identified on readout or troubleshooting flowchart in applicable technical reference if self-test fails.
6. Perform the performance check for each parameter.
7. Perform troubleshooting steps/fault isolation as identified on readout or troubleshooting flowchart in applicable technical reference for any parameter that is out of tolerance.
8. Verify the authority to perform repairs through Maintenance Allocation Chart (MAC), Warranty Card, FEDLOG, existing service contracts, Operations, or any other current regulatory guidance.
9. Perform repairs as required if authorized or make other appropriate arrangements to have item repaired/replaced.
10. Verify equipment passes self-test.
11. De-energize and disconnect all the equipment.
12. Complete proper maintenance forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Visually inspected the simplified test equipment for any physical defects.	____	____
2. Read and followed the preliminary instructions given in technical reference.	____	____
3. Set up the equipment needed to perform troubleshooting.	____	____
4. Performed self-test/operations check of Test Instrument (TI).	____	____
5. Performed troubleshooting steps/fault isolation as identified on readout or troubleshooting flowchart in applicable technical reference if self-test fails.	____	____
6. Performed the performance check for each parameter.	____	____
7. Performed troubleshooting steps/fault isolation as identified on readout or troubleshooting flowchart in applicable technical reference for any parameter that is out of tolerance.	____	____
8. Verified the authority to perform repairs through Maintenance Allocation Chart (MAC), Warranty Card, FEDLOG, existing service contracts, Operations, or any other current regulatory guidance.	____	____
9. Performed repairs as required if authorized or made other appropriate arrangements to have item repaired/replaced.	____	____
10. Verified repair.	____	____
11. De-energized and disconnected equipment.	____	____
12. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA PAM 750-8	AR 750-1
TB 385-4	EM 0103
TB 43-180	TB 9-6625-2321-24
TB 750-25	TM 9-6695-239-14
TM 9-4910-571-12&P	
TM 9-4910-571-34&P	
TM 9-4910-751-14&P	

Subject Area 3: Oscilloscopes and Fiber Optic Equipment

Operate Oscilloscope Work station

093-94H-1200

Conditions: In an operational environment (OE), with a requirement to operate a 5820A oscilloscope calibrator workstation; an oscilloscope to be used as unit under test (UUT), required cables and connectors, oscilloscope workstation manufacturer's manual, oscilloscope technical manual, and TB 385-4.

Standards: Operate the oscilloscope workstation according to applicable technical references. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

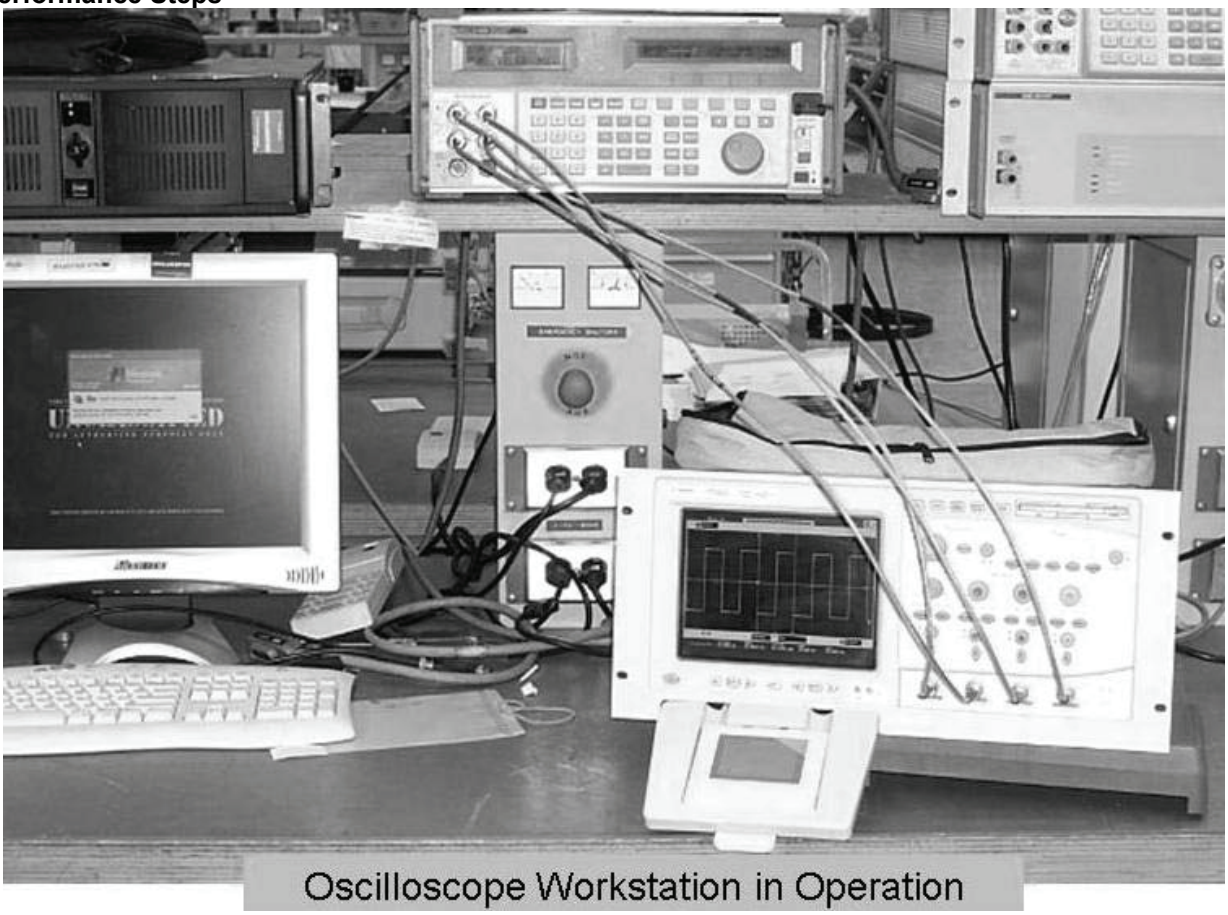


Figure 3-21. Oscilloscope Workstation

1. Observe all safety precautions, warnings, hazards, and notes.
2. Read and follow the preliminary instructions given in technical references to include:
   a. Check cal dates.
   b. Adjust display.
   c. Perform remote setup.
   d. Perform front panel tests.
   e. Exercise relays.
      (1) Press SETUP.
      (2) Press blue softkey UTILITY FUNCTIONS.

Performance Steps

(3) Press blue softkey SELF TESTS.
(4) Press blue softkey WORK RF RELAYS.

3. Set up support equipment necessary to operate the oscilloscope workstation and oscilloscope unit under test (UUT) according to applicable technical references.

4. Allow 30 minutes for warm up and stabilization.

5. Connect the oscilloscope workstation CHAN 1 and the UUT channel 1 using the cable(s) provided with the workstation.

6. Operate the oscilloscope workstation using the oscilloscope as the UUT.

Note: Adjust UUT controls as necessary to obtain an easily viewed signal trace.

a. Operate oscilloscope workstation in Voltage Mode by setting the following:
   (1) Press the VOLTAGE key or press blue softkey under MODE until "volt" appears.
   (2) Press blue softkey under CHANGE until "to DC" appears.
   (3) Press blue softkey under SCOPE Z until proper UUT input impedance (1M ohm or 50 ohm) appears.
   (4) Press blue softkey under TRIG until "off" appears.
   (5) Select the V/DIV MENU:
      (a) Select 10 mV/DIV using softkey.
      (b) Select #DIV = 8 using softkey.
   (6) Reconnect the signal by pressing OPR/STBY key on the Calibrator.
   (7) Obtain an 80 mV peak-to-peak signal on UUT.
   (8) Remove the signal by pressing OPR/STBY key.

b. Operate oscilloscope workstation in Edge Mode by setting the following:
   (1) Press the EDGE key or press blue softkey under MODE until "edge" appears.
   (2) Press blue softkey under TRIG until "off" appears.
   (3) Press blue softkey under TDPULSE until "off" appears.
   (4) Select 50 ohm impedance on UUT or use a 50 ohm termination directly at the UUT input.
   (5) Adjust voltage level for a 1 volt p-p, 1 MHz signal.
   (6) Reconnect the signal by pressing OPR/STBY key on the Calibrator.
   (7) Adjust the scale on the UUT to achieve a good picture of the edge.
   (8) Adjust the time base on the UUT to the fastest position available (1 ns/div or faster).
   (9) Verify that the UUT exhibits the proper rise time and pulse aberration characteristics.
   (10) Remove the input signal by pressing OPR/STBY key.

c. Operate oscilloscope workstation in Leveled Sine Mode.

Note: Steps 1 through 8 are a quick check of the UUT's frequency response.

   (1) Press LEVEL SINE key or press MODE softkey until "levsine" appears.
   (2) Select 50 ohm impedance on UUT or used a 50 ohm external termination directly at the UUT input.
   (3) Select output amplitude of 600 mV by pressing "6", "0", "0", "m", "V", and "ENTER" keys.
   (4) Reconnect the signal by pressing OPR/STBY key on the Calibrator.
   (5) Adjust UUT to obtain a sine wave trace of exactly 6 divisions peak-to-peak.
   (6) Make small adjustments (If necessary) to the voltage amplitude until the wave reaches exactly six divisions.
      (a) Fine-tune the voltage by pressing the EDIT FIELD key to bring a cursor into the Output Display.
      (b) Move the cursor with the left arrow key.
      (c) Turn the rotary knob to adjust the value.

Performance Steps

(7) Increase the frequency to 400 MHz (for 500-MHz instruments), or 500 MHz (for 600-MHz instruments).
(8) Increase the frequency slowly until the waveform decreases to 4.2 divisions.
(a) Fine-tune frequency by using the rotary knob.
(b) Press EDIT FIELD key to place a cursor in the Output Display.
(c) Press EDIT FIELD key again to place cursor in the frequency field, and use the left and right arrow keys to move cursor to the digit to change.
(d) Change the value by turning the rotary knob.
(e) Continue making small increments in the frequency until the signal drops to 4.2 divisions.
(At 4.2 divisions, the signal is at the frequency that corresponds to the -3 dB point.)
(9) Remove the input signal by pressing OPR/STBY key.

d. Operate oscilloscope workstation in Marker Mode.
(1) Press MARKER key or pressed MODE softkey until "marker" appeared.
(2) Select 50 ohm impedance or use an external 50 ohm termination. Make sure the UUT is dc-coupled.
(3) Apply a 200 nanosecond time marker value by pressing "2", "0", "0", "n", "s", and ENTER keys.
(4) Reconnect the signal by pressing OPR/STBY key on the Calibrator.
(5) Set UUT time base to show 10 time markers.
(a) Align the time markers with the UUT display panel graticule divisions.
(b) Align the signal's peaks with the horizontal center axis.
(6) Remove the input signal by pressing OPR/STBY key.

e. Operate oscilloscope workstation using Wave Generator.
(1) Press MORE MODES key and then select "WAVEGEN" or press the blue softkey under MODE until "wavegen" appears.
(2) Press blue softkey under SCOPE Z until proper UUT input impedance (1M or 50 ohm) appears.
(3) Press blue softkey under WAVE until "square" appears.

Note: Allow OFFSET default value to remain.

---

(4) Reconnect the signal by pressing OPR/STBY key on the calibrator.
(5) View signal trace on UUT.
(6) Press blue softkey under WAVE until "sine" appears.
(7) View signal trace on UUT.
(8) Press blue softkey under WAVE until "tri" appears.
(9) View signal trace on UUT.
(10) Remove the input signal by pressing OPR/STBY key.

f. Operate oscilloscope workstation in Pulse Mode.
(1) Press MORE MODES key and then select "PULSE" or press the blue softkey under MODE until "pulse" appears.
(2) Press blue softkey under AMPL until "600 mV" appears.
(3) Press blue softkey under TRIG until "off" appears.
(4) Reconnect the signal by pressing OPR/STBY key on the calibrator.
(5) Set pulse width of 50 nanoseconds:
(a) Press "5", "0", "n", "sec", and ENTER keys, or:
(b) Press EDIT FIELD key and use cursor and rotary knob to change digits in order to obtain a 50 nanosecond pulse width.
(6) Set pulse period for 1 microsecond:
(a) Press EDIT FIELD key until the cursor is on the second line of the output display (unlabeled line).
(b) Change the value using the cursor and rotary knob.

Performance Steps

Note: Pulse periods are not always compatible with the pulse width selected. A beep sounds if the pulse period is reduced to too low a value..

Note: Pulse width and period may be entered simultaneously by using data keys.

(7) Use the keyboard to enter in the pulse width and period value by pressing "5", "0", "n", "sec", "1", "u", "sec", and ENTER keys.
(8) Remove the input signal by pressing OPR/STBY key.

g. Operate oscilloscope workstation in Meas Z Mode.
(1) Press MORE MODES key and then select MEAS Z or press the blue softkey under MODE until “meas Z” appears.
(2) Measure input impedance:
(a) Press the blue softkey under MEASURE to select “res 50 ohm“ or “res 1M ohm“ termination.
(b) Connect the calibrator to Channel 1 on the UUT.
(c) Press OPR/STBY key to initiate the measurement.
(d) Press OPR/STBY key to terminate the measurement.
(3) Measure input capacitance:

Note: Input capacitance testing cannot be done with 50 ohm input impedance.

(a) Set the UUT for 1 M ohm input impedance.
(b) Press the blue softkey under MEASURE until "cap" appears.
(c) Press blue softkey to SET OFFSET with the output cable connected to the calibrator but NOT connected to the UUT in order to cancel stray capacitances.
(d) Connect the output cable to Channel 1 on the UUT.
(e) Press OPR/STBY key to initiate the measurement.
(f) Press OPR/STBY key to terminate the measurement.
(g) Operate oscilloscope workstation in Meas V Mode.

CAUTION
Input voltages exceeding 30 VDC may cause damage to the instrument. Do not apply voltages except in voltage measurement mode.

(1) Press MORE MODES key followed by the OTHER blue softkey.
(2) Press MEAS V CAL blue softkey when the display changes.
(3) Connect the UUT dc output to CHAN 1 of the workstation to display the UUT voltage output.
(4) Remove the UUT connection when the DC measurement is complete.

h. Operate oscilloscope workstation in Current Mode.
(1) Press the MORE MODES key followed by the OTHER and CURRENT blue softkeys.
(2) Verify the Control Display showed a label on the right that identifies the mode as “amp.”
(3) Attach a current probe to the current loop bar located above the calibrator power button.
(4) Press OPR/STBY key to initiate current.
(5) Press OPR/STBY key to terminate current.

i. Operate oscilloscope workstation in Overload Mode.

CAUTION
To avoid damage to the UUT, use this test to check the power handling capability of the 50 ohm input of the UUT. Before proceeding, ensure that the power rating of the UUT can handle the voltages and currents that this test can produce.

(1) Press MORE MODES key and then select OVERLD or press the blue softkey under MODE until “overld” appears.
(2) Press blue softkey under OUT VAL to select DC or AC and a value ranging from 5 V to 9 V (shown in Output Display). Key in or edit this value. Default value is 5 V DC.

Performance Steps

(3) Press blue softkey under T LIMIT to select a duration (in seconds). Default value is 10 seconds.
(4) Reconnect the signal by pressing OPR/STBY key on the Calibrator.
(5) Check for test results displayed with the UUTTRIP blue softkey.
(6) Remove the input signal by pressing OPR/STBY key.

7. De-energize and disconnect the equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Read and followed the preliminary instructions given in technical references to include: a. Checked cal dates. b. Adjusted display. c. Performed remote setup. d. Performed front panel tests. e. Exercised relays.	____	____
3. Set up support equipment necessary to operate the oscilloscope workstation and oscilloscope unit under test (UUT) according to applicable technical references.	____	____
4. Allowed 30 minutes for warm up and stabilization.	____	____
5. Connected the oscilloscope workstation CHAN 1and the UUT channel 1 using the cable(s) provided with the workstation.	____	____
6. Operated the oscilloscope workstation using the oscilloscope as the UUT.	____	____
7. De-energized and disconnected the equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

All measurement values listed in Performance Steps/Performance Measures are nominal. Evaluators may direct the Soldier to input different values in order to demonstrate the various capabilities of the oscilloscope workstation.

References

Required	**Related**
FLUKE 5820A	DA PAM 750-8
TB 385-4	TB 750-25
TM 43-6625-915-12	TM 9-6695-239-14

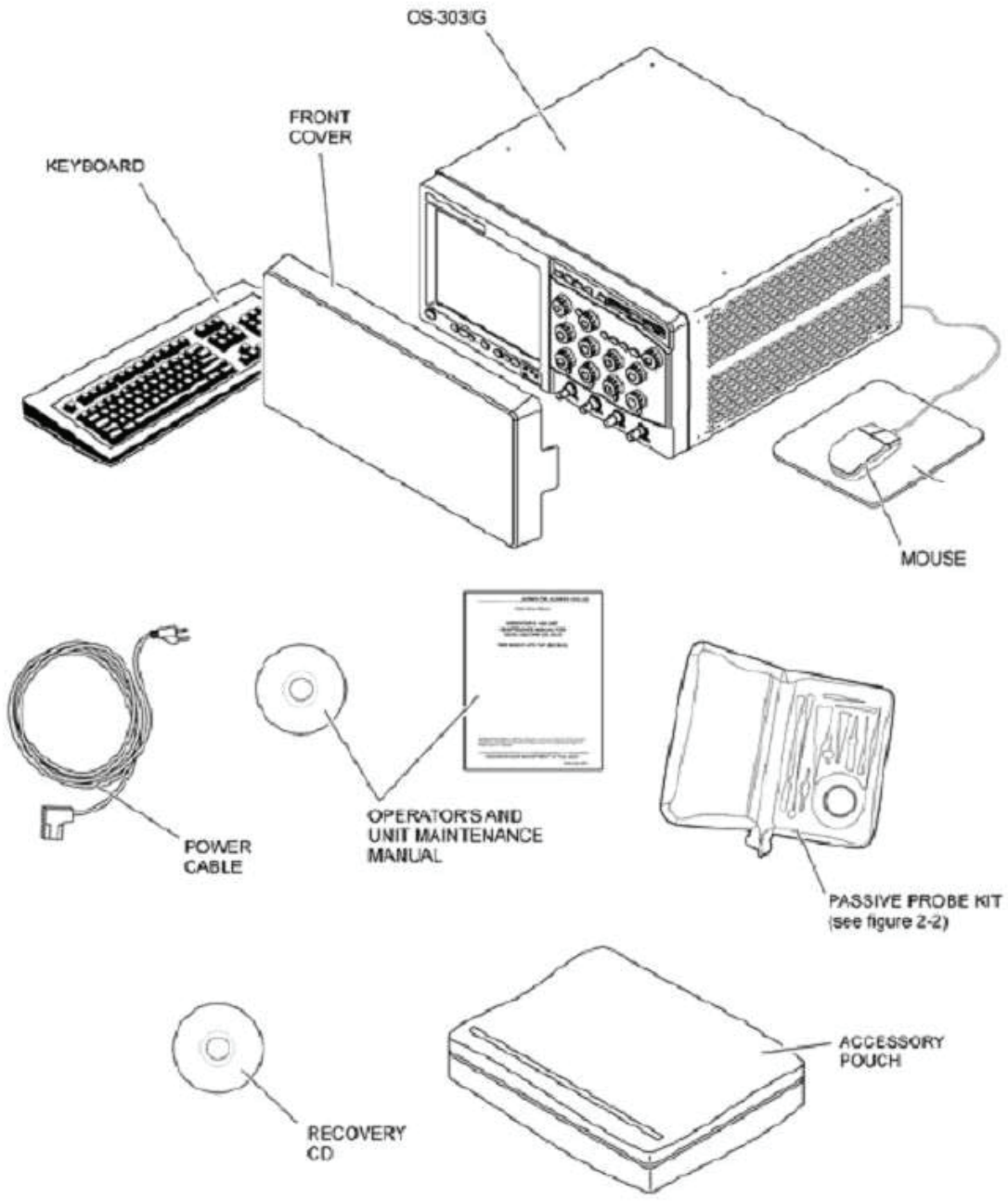
Operate Oscilloscope

093-94H-1210

Conditions: In an operational environment (OE), with a requirement to operate a model OS-303/G oscilloscope ; model 33250A function generator, time/frequency workstation, required cables, and TM 43-6625-915-12 or manufacturer's manual, and TB 385-4.

Standards: Operate oscilloscope in accordance with TM 43-6625-915-12 or manufacturer's manual. Observe all safety requirements in accordance with TB 385-4.

Performance Steps



OS/303-G Oscilloscope with Components

Figure 3-22. OS/303-G with Components

1. Observe all safety precautions, warnings, hazards, and notes.
2. Connect mouse and keyboard to oscilloscope.
3. Connect oscilloscope to A/C power source.
4. Turn on oscilloscope by pressing power button, and allow oscilloscope to run through start up procedure.

Performance Steps

5. Click on mouse icon in the upper right portion of screen to enable the graphical user interface.
6. Connect output of function generator to Channel 1 of the oscilloscope using radio frequency (RF) cable.
7. Adjust function generator to produce a 10 kHz, 500 mV RMS square wave signal.
8. Select Channel 1 by clicking on the corresponding checkbox on the display.
9. Adjust Channel 1 vertical scale:
   a. Click on oval icon representing Channel 1.
   b. Adjust scale to 200 mV/ by either clicking on the sine wave icons or directly on the vertical scaling value and using numeric buttons.
10. Adjust Channel 1 horizontal scale:
    a. Click on the "H" icon at the bottom portion of the screen to open the Horizontal Setup dialog box.
    b. Adjust scale to 100 µs by either clicking the controls in the Horizontal Setup dialog box, clicking the sweep speed value and using the numeric buttons, or clicking on the 2 sine wave icons to the right of the sweep speed value.
11. Press RUN button or click on the blue-green octagon shaped icon in the bottom left portion of the screen.
12. Perform Zoom function using the mouse:
    a. Click and drag a rectangle enclosing the area of the waveform to be viewed.
    b. Click inside the outlined rectangle to magnify the image.
    c. Click on "Close" button in the Zoom dialog box.
13. Perform waveform measurements using the icons in the Measurement Toolbar:
    a. Click, drag, and drop the Rise time icon onto a leading edge of the square wave.
    b. Click, drag, and drop the Fall time icon onto a trailing edge of the square wave.
    c. Click on Frequency icon and select "Entire Display" for the Measurement Area of the "Enter Measurement Info" dialog box.
    d. Click on Period icon and select "Single Cycle" for the Measurement Area of the "Enter Measurement Info" dialog box.
    e. Repeat the previous measurement techniques for the remaining icons in the Measurement Toolbar.
    f. Perform multiple simultaneous Rise time measurements by clicking, dragging, and dropping the Rise time icon to three separate leading edges of displayed waveform.
14. Press STOP button or click on the red octagon shaped icon in the bottom left portion of the screen.

Note: Performing steps 15 through 28 will result in a displayed image (Lissajou pattern) used for comparing frequency and phase relationships between two waveforms.

15. Adjust function generator to produce a 10 MHz, 1 V RMS sine wave signal.
16. Connect RF cable from rear panel connector J7 of the Time/Frequency workstation to oscilloscope Channel 2.
17. Select oscilloscope Channel 2 by clicking on the corresponding checkbox on the display.
18. Click on "Control" drop down menu on the upper toolbar.
19. Select "Autoscale" from the "Control" drop down menu.

Performance Steps

20. Click on "Analyze" drop down menu on the upper toolbar.
21. Select "Math/FFT" from the "Analyze" drop down menu.
22. Check the "Display On" and "Scaling" checkboxes.
23. Select "Versus" from the "Operator" drop down list box.
24. Select "Channel 1" from the "Source 1" drop down list box.
25. Select "Channel 2" from the "Source 2" drop down list box.
26. Click the "Close" button on the Math / FFT dialog box.
27. Turn off the active channels by unchecking the corresponding boxes for Channels 1 & 2.
28. Vary the frequency of the function generator in 1 Hz increments (above and below 10 MHz), and observe resulting changes in the displayed image.
29. Disable output of function generator.
30. Remove all RF cable connections.
31. De-energize oscilloscope and disconnect mouse and keyboard.
32. Stow and maintain all equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Connected mouse and keyboard to oscilloscope.	____	____
3. Connected oscilloscope to A/C power source.	____	____
4. Turned on oscilloscope by pressing power button, and allowed oscilloscope to run through start up procedure.	____	____
5. Clicked on mouse icon in the upper right portion of screen to enable the graphical user interface.	____	____
6. Connected output of function generator to Channel 1 of the oscilloscope using radio frequency (RF) cable.	____	____
7. Adjusted function generator to produce a 10 kHz, 500 mV RMS square wave signal.	____	____
8. Selected Channel 1 by clicking on the corresponding checkbox on the display.	____	____
9. Adjusted Channel 1 vertical scale.	____	____
10. Adjusted Channel 1 horizontal scale.	____	____
11. Pressed RUN button or clicked on the blue-green octagon shaped icon in the bottom left portion of the screen.	____	____
12. Performed Zoom function using the mouse.	____	____
13. Performed waveform measurements using the icons in the Measurement Toolbar.	____	____

Performance Measures	GO	NO-GO
14. Pressed STOP button or clicked on the red octagon shaped icon in the bottom left portion of the screen.	____	____
15. Adjusted function generator to produce a 10 MHz, 1 V RMS sine wave signal.	____	____
16. Connected rear panel connector J7 of the Time/Frequency workstation to oscilloscope Channel 2 using RF cable.	____	____
17. Selected oscilloscope Channel 2 by clicking on the corresponding checkbox on the display.	____	____
18. Clicked on "Control" drop down menu on the upper toolbar.	____	____
19. Selected "Autoscale" from the "Control" drop down menu.	____	____
20. Clicked on "Analyze" drop down menu on the upper toolbar.	____	____
21. Selected "Math/FFT" from the "Analyze" drop down menu.	____	____
22. Checked the "Display On" and "Scaling" checkboxes.	____	____
23. Selected "Versus" from the "Operator" drop down list box.	____	____
24. Selected "Channel 1" from the "Source 1" drop down list box.	____	____
25. Selected "Channel 2" from the "Source 2" drop down list box.	____	____
26. Clicked the "Close" button on the Math / FFT dialog box.	____	____
27. Turned off the active channels by unchecking the corresponding boxes for Channels 1 & 2.	____	____
28. Varied the frequency of the function generator in 1 Hz increments (above and below 10 MHz), and observed resulting changes in the displayed image.	____	____
29. Disabled output of function generator.	____	____
30. Removed all RF cable connections.	____	____
31. De-energized oscilloscope and disconnected mouse and keyboard.	____	____
32. Stowed and maintained all equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AGILENT 33250A	DA PAM 750-8
TB 385-4	ET6000-SERIES
TM 43-6625-915-12	TM 9-6695-239-14

Repair Oscilloscope

093-94H-1211

Conditions: In an operational environment (OE), given a faulty oscilloscope; oscilloscope workstation, test equipment as needed (multimeter, oscilloscope, and so on), electrician's tool kit, oscilloscope manufacturer's manual, and TB 385-4.

Standards: Repair oscilloscope in accordance with applicable technical reference(s). Observe all safety precautions in accordance with TB 385-4.

Performance Steps

NOTE:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the oscilloscope for any physical defects.
3. Read and follow the operator, maintenance, and repair instructions given in the applicable technical reference.
4. Set up support equipment necessary to repair the oscilloscope.
5. Perform operational circuit checks to sectionalize the malfunction.
6. Perform schematic analysis and functional tests to localize the malfunction.
7. Perform resistance, continuity, and power distribution tests to isolate the malfunction.
8. Repair/replace faulty component(s).
9. Verify repair.
10. De-energize and disconnect equipment.
11. Complete proper maintenance forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the oscilloscope for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in the applicable technical reference.	____	____
4. Set up support equipment necessary to repair the oscilloscope.	____	____

Performance Measures	GO	NO-GO
5. Performed operational circuit checks to sectionalize the malfunction.	____	____
6. Performed a schematic analysis and functional tests to localize the malfunction.	____	____
7. Performed resistance, continuity, and power distribution tests to isolate the malfunction.	____	____
8. Repaired/replaced faulty component(s).	____	____
9. Verified repair.	____	____
10. De-energized and disconnected equipment.	____	____
11. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AGILENT 54830	AR 750-1
TB 385-4	DA PAM 750-8
TM 11-6625-3135-40	EM 0007
TM 43-6625-915-12	TB 43-180
	TB 750-25
	TM 9-6695-239-14

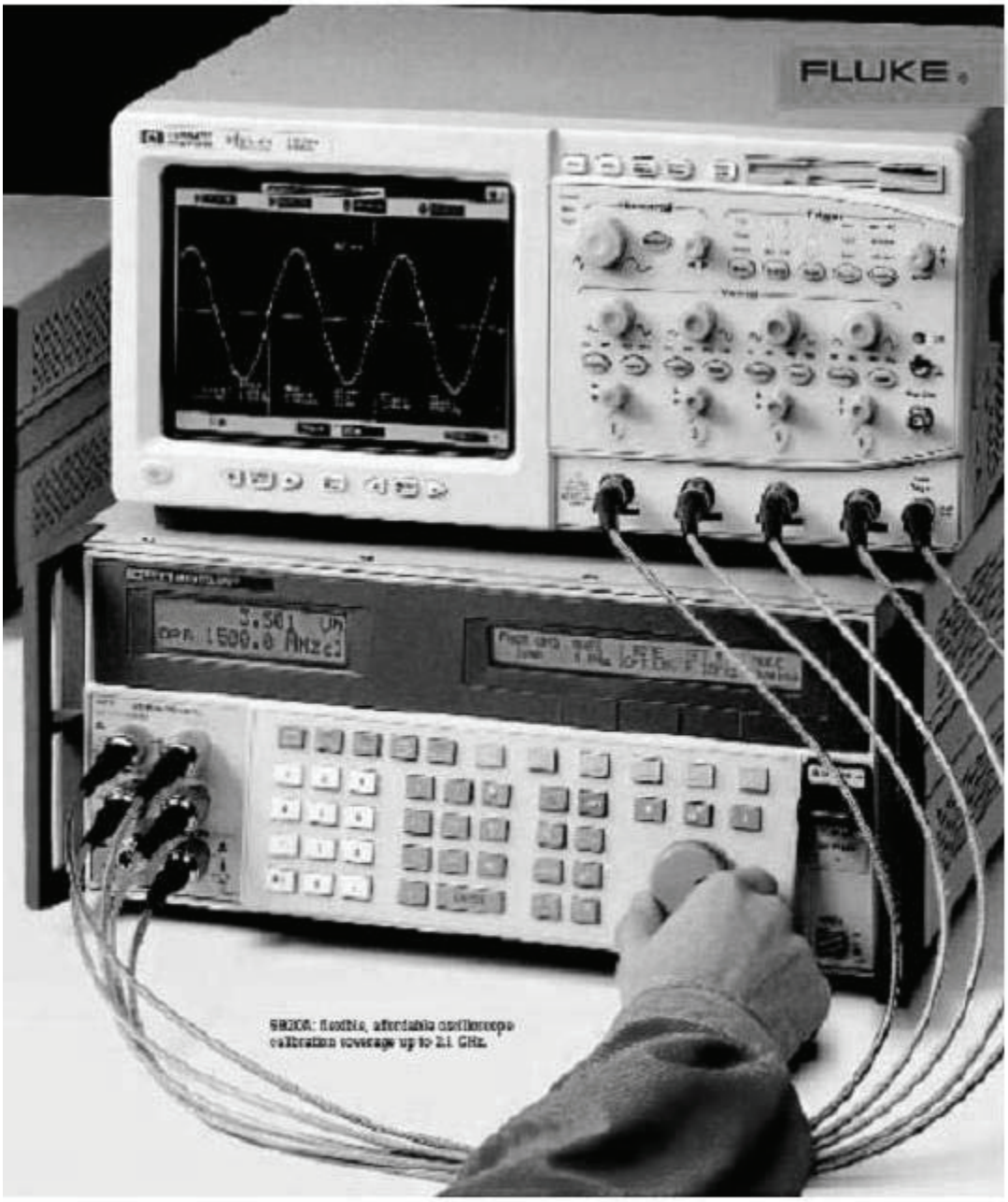
Calibrate Oscilloscope

093-94H-1212

Conditions: In an operational environment (OE), given a model OS-303/G oscilloscope requiring calibration; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2344-24; TB 43-180; TB 385-4, TB 750-25; and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate oscilloscope in accordance with TB 43-180 and TB 9-6625-2344-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps



Fluke 5820A Oscilloscope Workstation pictured with oscilloscope on top

Figure 3-23. Fluke 5820A Oscilloscope Workstation

1. Identify correct calibration procedure to be used in accordance with TB 43-180.

Performance Steps

2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Note: Oscilloscope being calibrated is referred to as the test instrument (TI). All paragraphs referenced in steps 4 through 8 are found in TB 9-6625-2344-24.

4. Perform preliminary operations.
5. Perform Equipment Setup.
   a. Connect mouse and keyboard to TI.
   b. Apply power and allow 30 minute warm-up.

Note: Warm up must be preceded by a 2 hour non-operating temperature stabilization period (if applicable).

   c. Access UTILITIES menu using TI mouse.
   d. Open SELF TEST WINDOW and run SCOPE SELF TESTS.

Note: If one or more self-tests fail, refer to TM 43-6625-915-12, Chapter 2, Troubleshooting Procedures.

   e. Close SELF TEST WINDOW after TI passes self tests.

Note: Self-calibration should be performed if the TI fails any parameter.

6. Perform Calibration Process as follows:
   a. Perform Vertical Gain Accuracy check in accordance with paragraph 8.
   b. Perform Vertical Offset check in accordance with paragraph 9.
   c. Perform Bandwidth Accuracy check in accordance with paragraph 10.
   d. Perform Equivalent Time Measurement check in accordance with paragraph 11.
   e. Perform Real Time Measurement check in accordance with paragraph 12.
   f. Perform Trigger Sensitivity check in accordance with paragraph 13.
   g. Perform DC Calibrator check in accordance with paragraph 14.

Note: DO NOT perform Power Supply checks if all other parameters are in tolerance.

   h. Perform Power Supply check in accordance with paragraph 15.
7. Perform the Alignment Process described in Section IV ONLY IF the TI fails any parameter:
   a. Perform Self-calibration in accordance with paragraph 17.
   b. Perform procedures in accordance with paragraph 18.
8. Perform Final procedure in accordance with paragraph 16.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____

Performance Measures	GO	NO-GO
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary operations.	____	____
5. Performed equipment setup.	____	____
6. Performed Calibration Process.	____	____
7. Performed the Alignment Process described in Section IV ONLY IF the TI fails any parameter.	____	____
8. Performed Final procedure in accordance with paragraph 16.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6625-2344-24	
TM 43-6625-915-12	
USATA MASTER LIST	

Calibrate Fiber Optic Equipment

093-94H-1221

Conditions: In an operational environment (OE), given fiber optic equipment requiring calibration; an Optical Fiber Test Set (TS-4320(P)/G), TB 9-6625-2309-24; forms, records, reports, equipment, and accessories required as listed in TB 9-6625-2309-24, TB 43-180; TB 750-25; TB 385-4; TB MED 524; TM 11-6625-3271-12, TM 11-6625-3271-40 and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate fiber optic equipment in accordance with TB 43-180 and TB 9-6625-2309-24. Observe all safety precautions in accordance with TB 385-4 and TB MED 524. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

FOCUS LWCM Module

Figure 3-24. FOCUS

Performance Steps

FOCUS SWCM Module

LWCM

Figure 3-25. FOCUS SWCM

8153A Lightwave Multimeter

w/ 81531A Sensor Plugin

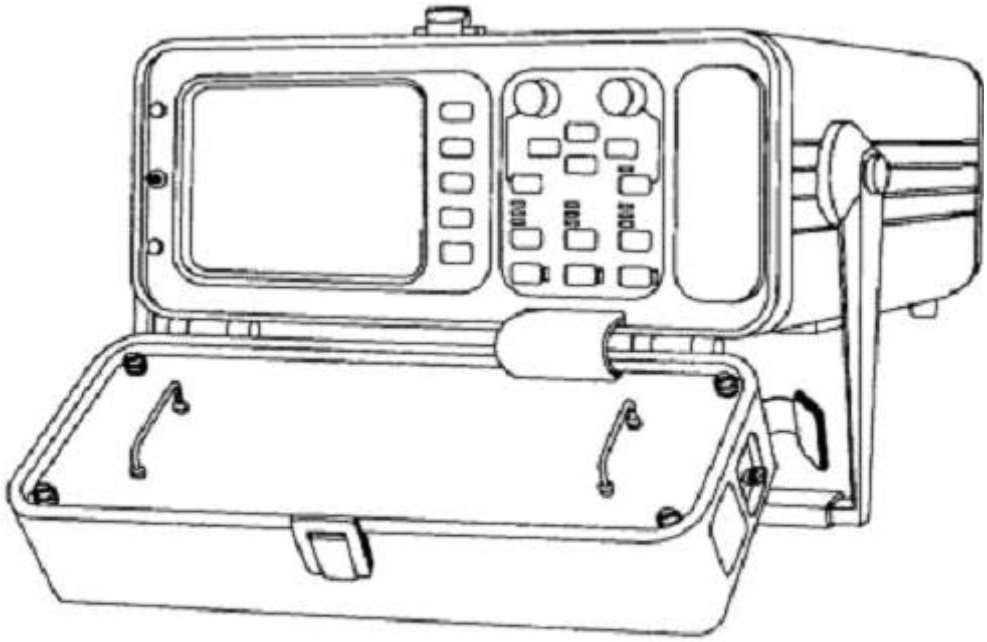
Figure 3-26. 8153A Lightwave

Performance Steps

DG535 Digital Generator

Multimeter

Figure 3-27. DG535 Digital



OPTICAL FIBER TEST SET
TS-4320(P)/G
(NSN 6625-01-355-4087) (EIC: N/A)

Generator

Figure 3-28. Optical Fiber Test

Performance Steps

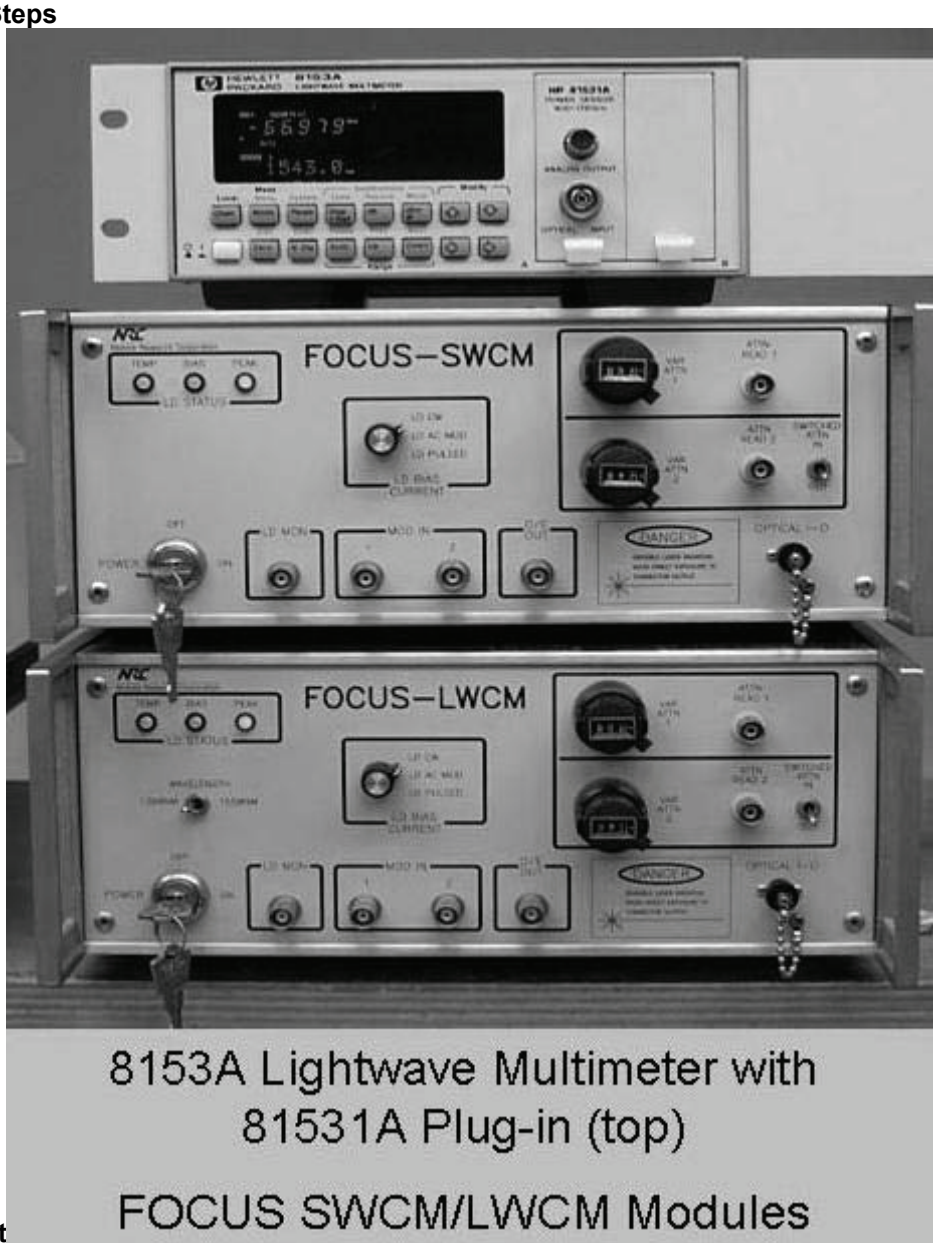


Figure 3-29. Fiber Optic Calibration Standards

Set

1. Observe all safety precautions, warnings, hazards, and notes in accordance with TB 385-4, TB MED 524, and manufacturer's operator manuals.

2. Operate the fiber optic equipment.
   a. Zero lightwave multimeter.
   b. Set up lightwave multimeter to measure 850 nM in dBm units.
   c. Set FOCUS-SWCM LD Bias Current switch to LD Pulsed.
   d. Set FOCUS-SWCM VAR ATTN 1 and VAR ATTN 2 controls for maximum attenuation (CW).
   e. Set FOCUS-SWCM VAR ATTN 2 SWITCHED ATTN 2 IN OUT Switch to OUT.
   f. Connect appropriate fiber optic jumper cable (FC to STC-2-METER) from ST connector adapter on lightwave multimeter optical input to FOCUS-SWCM OPTICAL I-O.
   g. Set FOCUS-SWCM POWER OFF ON key control to ON.

Performance Steps

h. Monitor lightwave multimeter and adjust FOCUS-SWCM VAR ATTN 1 control for a -27 dBm display on lightwave multimeter.
i. Set FOCUS-SWCM ATTN 2 SWITCHED ATTN IN OUT switch to IN.
j. Monitor lightwave multimeter display and adjust FOCUS-SWCM VAR ATTN 2 control for lightwave multimeter indication of -33 dBm.
k. Reset FOCUS-SWCM VAR ATTN 1 and VAR ATTN 2 controls for maximum attenuation (CW).
l. Set FOCUS-SWCM POWER OFF ON key control to OFF.
m. Disconnect fiber optic jumper cable from ST connector adapter on lightwave multimeter optical input.
n. Set up lightwave multimeter to measure 1310 nM in dBm units.
o. Set FOCUS-LWCM LD Bias Current switch to LD Pulsed.
p. Set FOCUS-LWCM VAR ATTN 1 and VAR ATTN 2 controls for maximum attenuation (CW).
q. Set FOCUS-LWCM VAR ATTN 2 SWITCHED ATTN 2 IN OUT Switch to OUT.
r. Set FOCUS-LWCM WAVELENGTH switch to 1310 nM.
s. Connect appropriate fiber optic jumper cable (FC to STC-2-METER) from ST connector adapter on lightwave multimeter optical input to FOCUS-LWCM OPTICAL I-O.
t. Set FOCUS-LWCM POWER OFF ON key control to ON.
u. Monitor lightwave multimeter and adjust FOCUS-LWCM VAR ATTN 1 control for a -27 dBm display on lightwave multimeter.
v. Reset FOCUS-LWCM VAR ATTN 1 and VAR ATTN 2 controls for maximum attenuation (CW).
w. Set FOCUS-LWCM POWER OFF ON key control to OFF.

3. De-energize and disconnect equipment.
4. Identify correct calibration procedure to be used in accordance with TB 43-180.
5. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
6. Observe all safety precautions, warnings, hazards, and notes.

Note: Paragraphs referenced in steps 4 through 9 are found in TB 9-6625-2309-24.

7. Perform preliminary instructions in accordance with paragraph 6.
8. Perform Equipment setup in accordance with paragraph 7.
   a. Perform time insertion delay characterization in accordance with Section IV, paragraph 12 if FOCUS-SWCM optical subassembly, FOCUS-LWCM optical subassembly, or DG535 digital delay/pulse generator have been repaired or replaced.
   b. Perform steps in accordance with paragraph 11 to change ZERO-KM SETTING if software level 1.08a is installed in TI.
9. Perform horizontal scale error performance check in accordance with paragraph 8a and make necessary adjustments in accordance with paragraph 8b.
10. Perform attenuation scale non-linearity performance check in accordance with paragraph 9a, and make necessary adjustments in accordance with paragraph 9b.
11. Perform circuit alignment only if TI is found to be out of tolerance during Horizontal scale error performance check or Attenuation scale non-linearity performance; or if FOCUS-SWCM optical subassembly, FOCUS-LWCM optical subassembly, or DG535 digital delay/pulse generator are repaired or replaced.
    a. Perform A/D adjustments in accordance with paragraph 10.
    b. Perform Time insertion delay characterization in accordance with paragraph 12.

Performance Steps

12. Perform final procedure in accordance with paragraph 13.
13. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes in accordance with TB 385-4, TB Med 524, and manufacturer's operator manuals.	____	____
2. Operated the fiber optic equipment.	____	____
3. De-energized and disconnected equipment.	____	____
4. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
5. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
6. Observed all safety precautions, warnings, hazards, and notes.	____	____
7. Performed preliminary instructions in accordance with paragraph 6.	____	____
8. Performed equipment setup in accordance with paragraph 7.	____	____
9. Performed horizontal scale error performance check in accordance with paragraph 8a and made necessary adjustments in accordance with paragraph 8b.	____	____
10. Performed attenuation scale non-linearity performance check in accordance with paragraph 9a and made necessary adjustments in accordance with paragraph 9b.	____	____
11. Performed circuit alignment.	____	____
12. Performed final procedure in accordance with paragraph 13.	____	____
13. Disconnected and maintained equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
HP 8153A	
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6625-2309-24	
TB MED 524	
TM 11-6625-3271-12	
TM 11-6625-3271-40	
USATA MASTER LIST	

Subject Area 4: Signal Generator

Operate Signal Generator Work station

093-94H-1300

Conditions: In an operational environment (OE), with a requirement to operate a signal generator workstation; model 8902A signal generator tester, model 11793A waveform converter, model 1121 audio analyzer, model 11722A and 11792A sensors, a signal generator to be used as the unit under test, cables and connectors, signal generator workstation manufacturer's manuals, signal generator manufacturer's manual or TM, and TB 385-4.

Standards: Operate the signal generator workstation in accordance with applicable technical references (manufacturer's manuals). Observe all safety precautions in accordance with TB 385-4.

Performance Steps

Figure 3-30. Key Components of the Signal Generator Workstation

1. Observe all safety precautions, warnings, hazards, and notes.
2. Read and follow the preliminary instructions given in technical references for signal generator workstation.
3. Set up the equipment needed to operate the signal generator workstation using the signal generator as unit under test (UUT) according to technical references.
4. Operate the signal generator workstation controls to establish the appropriate measurement configuration to measure the signal output by UUT.
   a. Measure RF output frequency.
   b. Measure RF output power.
   c. Measure tuned RF level.
   d. Measure amplitude modulation.

Performance Steps

e. Measure frequency modulation.
f. Measure phase modulation.
g. Measure modulation frequency.
h. Measure audio level.
i. Measure audio distortion.

5. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Read and followed the preliminary instructions given in technical references for signal generator workstation.	____	____
3. Set up the equipment needed to operate the signal generator workstation using the signal generator as unit under test (UUT) according to technical references.	____	____
4. Operated the signal generator workstation controls to establish the appropriate measurement configuration to measure the signal output by UUT.	____	____
5. De-energized and disconnected the equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
HP 8902A	683XXC
TB 385-4	ANRITSU 682XXB/683XXB
	DA PAM 750-8
	HP 8902A CAL MANUAL
	TM 11-6625-3165-14
	TM 9-6695-239-14

Operate Signal Generator

093-94H-1310

Conditions: In an operational environment (OE), with a requirement to operate a signal generator; model SG-1207 /U, 68369NV, or 68347M signal generator, spectrum analyzer, signal generator workstation, RF cables as required, TM 11-6625-3165-14 or manufacturer's manual, and TB 385-4.

Standards: Operate the signal generator in accordance with appropriate technical or manufacturer's manual. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

68369NV Signal Generator

Figure 3-31. 68369NV Signal Generator

Performance Steps

Figure 3-32. 68347M Signal Generator

1. Observe all safety precautions, warnings, hazards, and notes.
2. Prepare signal generator for use.
3. Operate signal generator.
   a. Set frequency.
   b. Set amplitude.
   c. Set output ON/OFF.
   d. Set amplitude modulation.
   e. Set frequency modulation.
   f. Set phase modulation.
   g. Set pulse modulation.
   h. Set internal modulation source.
   i. Set external modulation source.
   j. Set modulation output.
   k. Set HP-IB address.
4. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Prepared signal generator for use.	____	____
3. Operated signal generator.	____	____
a. Set frequency.		

Performance Measures	GO	NO-GO
b. Set amplitude.		
c. Set output ON/OFF.		
d. Set amplitude modulation.		
e. Set frequency modulation.		
f. Set phase modulation.		
g. Set pulse modulation.		
h. Set internal modulation source.		
i. Set external modulation source.		
j. Set modulation output.		
k. Set HP-IB address.		
4. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
683XXC	DA PAM 750-8
ANRITSU 682XXB/683XXB	TM 9-6695-239-14
TB 385-4	
TM 11-6625-3165-14	

Repair Signal Generator
093-94H-1311

Conditions: In an operational environment (OE), given a malfunctioning signal generator, signal generator workstation, test equipment as needed (multimeter, oscilloscope, spectrum analyzer, and so on), electrician's tool kit, signal generator manufacturer's manual, maintenance forms, and TB 385-4.

Standards: Repair signal generator in accordance with applicable signal generator technical references. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

NOTE:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the signal generator for any physical defects.
3. Read and follow the operator, maintenance, and repair instructions given in technical reference.
4. Set up equipment necessary for troubleshooting the signal generator.
5. Perform operational circuit checks to sectionalize the malfunction.
6. Perform schematic analysis and functional tests to localize the malfunction.
7. Perform resistance, continuity, and power distribution tests to isolate the malfunction.
8. Repair/replace faulty component(s).
9. Verify repair.
10. De-energize and disconnect equipment.
11. Complete proper maintenance forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the signal generator for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in technical reference.	____	____
4. Set up equipment needed for troubleshooting the signal generator.	____	____

Performance Measures	GO	NO-GO
5. Performed operational circuit checks to sectionalize the malfunction.	____	____
6. Performed a schematic analysis and functional tests to localize the malfunction.	____	____
7. Performed resistance, continuity, and power distribution tests to isolate the malfunction.	____	____
8. Repaired/replaced faulty component(s).	____	____
9. Verified repair.	____	____
10. De-energized and disconnected all the equipment.	____	____
11. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
683XXC	AR 750-1
HP 8902A	DA PAM 750-8
TB 385-4	TB 43-180
TB 750-25	TM 9-6695-239-14
TM 11-6625-3165-14	

Calibrate Signal Generator

093-94H-1312

Conditions: In an operational environment (OE), given signal generator requiring calibration, applicable calibration procedure, Forms, Records, Reports, Equipment, and Accessories required as listed in procedure; TB 43-180, TB 385-4, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate the signal generator in accordance with TB 43-180 and calibration procedure. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

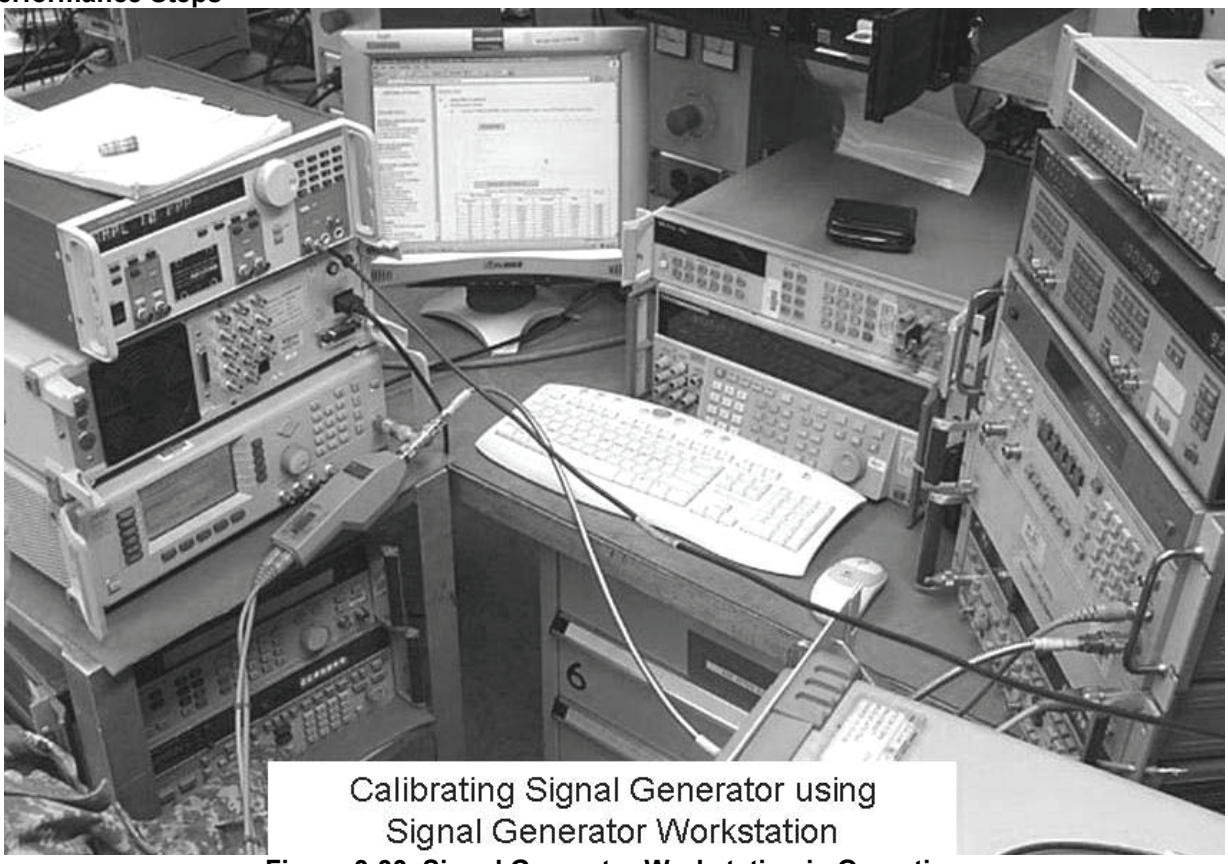


Figure 3-33. Signal Generator Workstation in Operation

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.
4. Perform preliminary operations.
   a. Perform setup instructions.
   b. Perform equipment connections.
5. Perform line stability performance check and make necessary adjustments.

Performance Steps

6. Perform frequency accuracy performance check and make necessary adjustments.
7. Perform RF output performance check and make necessary adjustments.
8. Perform output level flatness performance check and make necessary adjustments.
9. Perform attenuation performance check and make necessary adjustments.
10. Perform spectral purity performance check and make necessary adjustments.
11. Perform pulse modulation performance check and make necessary adjustments.
12. Perform amplitude modulation performance check and make necessary adjustments.
13. Perform frequency modulation performance check and make necessary adjustments.
14. Perform phase modulation performance check and make necessary adjustments.
15. Perform internal oscillator performance check and make necessary adjustments.
16. Perform power supply performance check if necessary and make required adjustments.
17. Perform final procedure.
18. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary operations.	____	____
5. Performed line stability performance checks and made necessary adjustments.	____	____
6. Performed frequency accuracy performance checks and made necessary adjustments.	____	____
7. Performed RF output performance checks and made necessary adjustments.	____	____
8. Performed output level flatness performance checks and made necessary adjustments.	____	____
9. Performed attenuation performance checks and made necessary adjustments.	____	____
10. Performed spectral purity performance checks and made necessary adjustments.	____	____
11. Performed pulse modulation performance checks and made necessary adjustments.	____	____
12. Performed amplitude modulation performance checks and made necessary adjustments.	____	____
13. Performed frequency modulation performance checks and made necessary adjustments.	____	____

Performance Measures	GO	NO-GO
14. Performed phase modulation performance checks and made necessary adjustments.	____	____
15. Performed internal oscillator performance checks and made necessary adjustments.	____	____
16. Performed power supply performance checks (if necessary) and made required adjustments.	____	____
17. Performed final procedure.	____	____
18. Disconnected and maintained equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 7372	AR 750-1
DA LABEL 80	AR 750-43
TB 385-4	DA FORM 2417
TB 43-180	DA LABEL 163
TB 750-25	DA PAM 750-8
TB 9-6625-2182-24	TM 11-6625-3165-14
TB 9-6625-2322-24	TM 9-6695-239-14
TB 9-6625-2323-24	
USATA MASTER LIST	

Operate Pulse Generator

093-94H-1320

Conditions: In an operational environment (OE), with a requirement to operate a model 9210 Pulse Generator, oscilloscope, RF cables as required, Pulse Generator manufacturer's manual, and TB 385-4.

Standards: Operate the pulse generator in accordance with the applicable technical reference/manufacturer's manual. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

Figure 3-34. 9210 LeCroy Pulse Generator

1. Observe all safety precautions, warnings, hazards, and notes.
2. Prepare pulse generator for operation using oscilloscope for signal display.
3. Operate pulse generator.
   a. Set pulse amplitude.
   b. Set pulse width.
   c. Set pulse duty cycle.
   d. Set pulse period.
   e. Set pulse frequency.
   f. Set pulse output ON/OFF.
   g. Set trigger to normal (internal).
   h. Set trigger to external (single).
   i. Set GPIB address.
4. De-energize and disconnect equipment.
5. Maintain tools and equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Prepared pulse generator for use using oscilloscope for display.	____	____
3. Operated pulse generator.	____	____
4. De-energized and disconnected equipment.	____	____
5. Maintained tools and equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
MODEL 9210	DA PAM 750-8
TB 385-4	TM 43-6625-915-12
	TM 9-6695-239-14

Calibrate Radio Frequency (RF) Power Sensor

093-94H-1330

Conditions: In an operational environment (OE), given a Power Sensor or Thermistor Mount (10 MHz to 18 GHz) requiring calibration, TB 9-6625-1932-24, Forms, Records, Reports, Equipment, and Accessories required for Secondary Transfer Calibration Process as listed in TB 9-6625-1932-24, TB 43-180, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate radio frequency (RF) power sensor in accordance with the applicable calibration procedure and TB 43-180. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

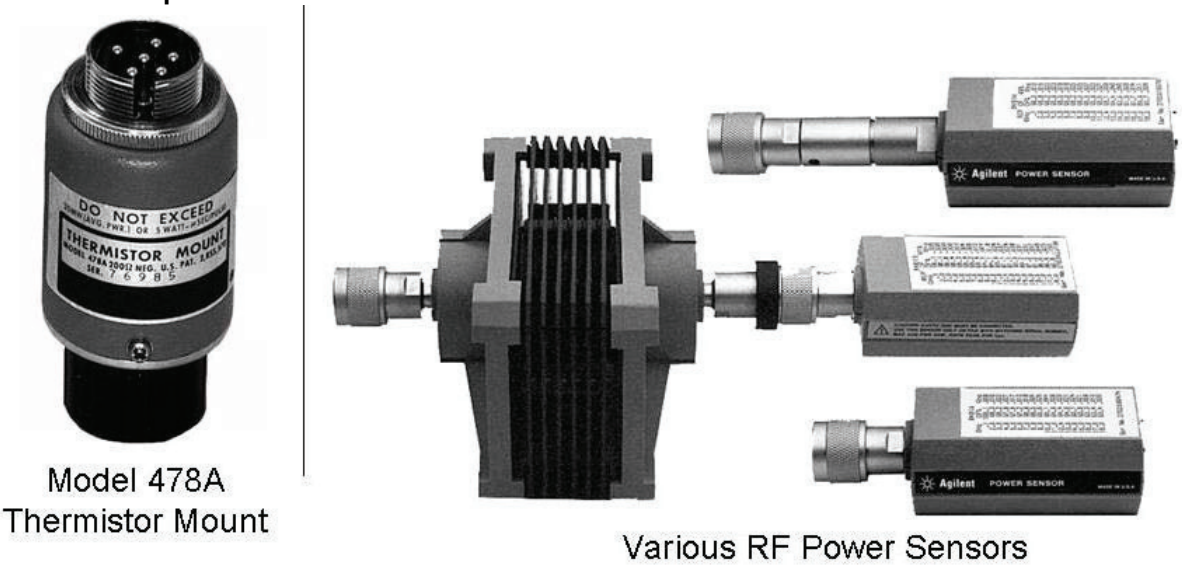


Figure 3-35. Examples of RF Power Sensors

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Determine correct section of TB 9-6625-1932-24 to use for Secondary Transfer level calibration.
4. Observe all safety precautions, warnings, hazards, and notes.
5. Perform preliminary instructions.
6. Perform equipment setup.
7. Perform calibration factors performance check and make necessary adjustments.
8. Perform final procedure.
9. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Determined correct section of TB 9-6625-1932-24 to use for Secondary Transfer level calibration.	____	____
4. Observed all safety precautions, warnings, hazards, and notes.	____	____
5. Performed preliminary instructions.	____	____
6. Performed equipment setup.	____	____
7. Performed calibration factors performance checks and made necessary adjustments.	____	____
8. Performed final procedure.	____	____
9. Disconnected and maintained equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 7372	683XXC
DA LABEL 80	AR 750-1
TB 385-4	AR 750-43
TB 43-180	DA FORM 2417
TB 750-25	DA LABEL 163
TB 9-6625-1932-24	DA PAM 750-8
USATA MASTER LIST	TM 9-6695-239-14

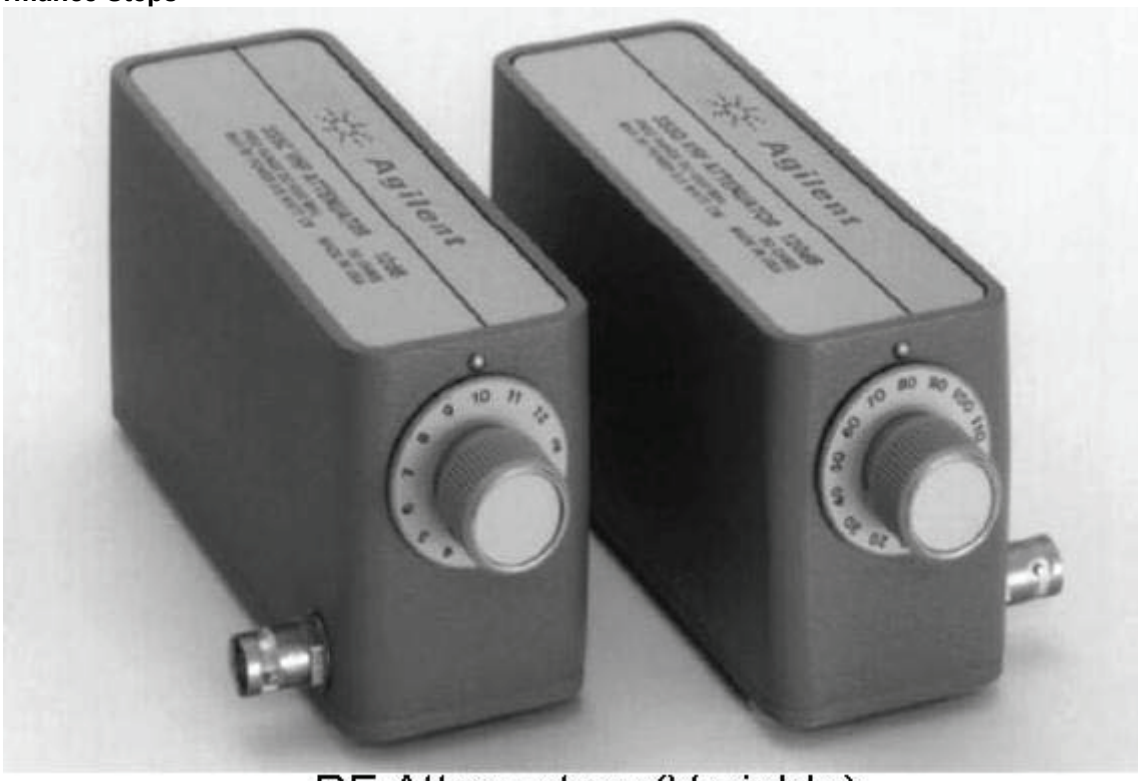
Calibrate Attenuator

093-94H-1340

Conditions: In an operational environment (OE), given attenuators (fixed and variable, 10 MHz to 18 GHz) requiring calibration; TB 9-4931-523-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-4931-523-24; Software package USATA 001-PDMAT (V) (if available for use in alternate performance checks), TB 43-180, TB 385-4, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate attenuator in accordance withthe applicable calibration procedure and TB 43-180. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps



RF Attenuators (Variable)

Figure 3-36. RF Attenuators (Variable)

Performance Steps

RF Attenuators (Fixed)

Figure 3-37. RF Attenuators (Fixed)

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.
4. Calibrate attenuator (fixed and variable, 10 MHz to 18 GHz) in accordance with applicable calibration procedure.
   a. Perform preliminary instructions.
   b. Perform equipment setup.
   c. Perform fixed attenuation measurement (10 MHz to 18 GHz) performance check or alternate fixed attenuation measurement (10 MHz to 18 GHz) performance check, and prepare a correction chart if necessary.
   d. Perform variable attenuation measurement (10 MHz to 18 GHz) performance check or alternate fixed attenuation measurement (10 MHz to 18 GHz) performance check, and prepare a correction chart if necessary.
   e. Perform final procedure.
5. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. If applicable, ensure USATA PD-MAT software is loaded on signal generator workstation controller.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Calibrated attenuator (fixed and variable, 10 MHz to 18 GHz) in accordance with applicable calibration procedure.	____	____
5. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-4931-523-24	
USATA MASTER LIST	

Repair Power Meter

093-94H-1350

Conditions: In an operational environment (OE), given a malfunctioning power meter; signal generator, test equipment as needed (multimeter, oscilloscope, spectrum analyzer, and so on), electrician's tool kit, power meter manufacturer's manual, and TB 385-4.

Standards: Repair power meter in accordance with the applicable technical reference(s). Observe all safety precautions in accordance with TB 385-4.

Performance Steps

432A Power Meter

Figure 3-38. 432A Power Meter

NOTE:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

Performance Steps

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the power meter for any physical defects.
3. Read and follow the operator, maintenance, and repair instructions given in the applicable technical reference.
4. Set up equipment needed for troubleshooting the power meter.
5. Perform operational circuit checks to sectionalize the malfunction.
6. Perform a schematic analysis and functional tests to localize the malfunction.
7. Perform resistance, continuity, and power distribution tests to isolate the malfunction.
8. Repair/replace faulty component(s).
9. Verify repair.
10. De-energize and disconnect equipment.
11. Complete proper maintenance forms.

Evaluation Preparation: Ensure all required equipment or appropriate substitutions are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the power meter for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in the applicable technical reference.	____	____
4. Set up equipment needed for troubleshooting the power meter.	____	____
5. Performed operational circuit checks to sectionalize the malfunction.	____	____
6. Performed a schematic analysis and functional tests to localize the malfunction.	____	____
7. Performed resistance, continuity, and power distribution tests to isolate the malfunction.	____	____
8. Repaired/replaced faulty component(s).	____	____
9. Verified repair.	____	____
10. De-energized and disconnected equipment.	____	____
11. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
HP437B	437B
TB 385-4	AR 750-1
TM 9-6625-2469-15	TB 750-25
	TM 9-6695-239-14

Calibrate Power Meter

093-94H-1351

Conditions: In an operational environment (OE), given Power Meter (437B) requiring calibration, TB 9-6625-2297-24, Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2297-24; TB 43-180, TB 385-4, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate power meter in accordance with TB 43-180 and TB 9-6625-2297-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Figure 3-39. 437B Power Meter

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Note: Perform steps 4 through 10 in accordance with TB 9-6625-2297-24.

4. Perform preliminary instructions.
5. Perform equipment setup.
6. Perform zero carryover performance check and make adjustments if necessary.
7. Perform Instrument accuracy performance check and make adjustments if necessary.

Performance Steps

8. Perform reference frequency oscillator performance check and make adjustments if necessary.
9. Perform power reference level performance check and make adjustments if necessary.
10. Perform final procedure.
11. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary instructions.	____	____
5. Performed equipment setup.	____	____
6. Performed zero carryover performance checks and made adjustments if necessary.	____	____
7. Performed Instrument accuracy performance checks and made adjustments if necessary.	____	____
8. Performed reference frequency oscillator performance checks and made adjustments if necessary.	____	____
9. Performed power reference level performance checks and made adjustments if necessary.	____	____
10. Performed final procedure.	____	____
11. Disconnected and maintained equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	437B
DA FORM 7372	AR 750-1
DA LABEL 163	AR 750-43
DA LABEL 80	DA PAM 750-8
TB 385-4	TM 9-6625-2469-15
TB 43-180	TM 9-6695-239-14
TB 750-25	
TB 9-6625-2297-24	
USATA MASTER LIST	

Subject Area 5: Microwave and Radio Frequency (RF)

Operate Spectrum Analyzer

093-94H-1400

Conditions: In an operational environment (OE), with a requirement to operate a spectrum analyzer (AN/USM-677); signal generator, RF cables as required, TM 43-6625-914-12 or manufacturer's manual, and TB 385-4.

Standards: Operate the spectrum analyzer in accordance with the applicable technical reference. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

AN/USM-677 Spectrum Analyzer

Figure 3-40. AN/USM-677 Spectrum Analyzer

1. Observe all safety precautions, warnings, hazards, and notes.

CAUTION: Ensure that the total power of all signals at the analyzer input does not exceed +30 dBm (1 watt).

Note: Spectrum analyzer controls are indicated by "<" and ">" symbols.

2. Press < | > On key.
3. Allow 5 minutes for warm-up.
4. Press <Preset> (if the softkeys <Factory Preset> and <User Preset> appear, select <Factory Preset>).

Performance Steps

5. Connect signal generator output to spectrum analyzer front panel input using radio frequency (RF) cable.
6. Set signal generator for a 10 MHz, 0 dBm output.
7. Press <AMPLITUDE>, <1>, <0>, and <dBm>.
8. Press <FREQUENCY>, <Center Freq>, <3>, <0>, and <MHz>.
9. Observe the 10 MHz signal on the spectrum analyzer display.
10. Press <SPAN>, <5>, <0>, and <MHz>.
11. Read frequency and amplitude.
    a. Press <Peak Search>.
    b. Observe frequency and amplitude of the marker appear both in the active function block, and in the upper-right corner of the screen.
    c. Move marker by using the knob, the arrow keys, or the softkeys in the Peak Search menu.
    d. Press <Peak Search>.
12. Change Reference Level.
    a. Press <AMPLITUDE>, and note that reference level (Ref Level) is now the active function.
    b. Press <Marker->>, <Mkr-> Ref Lvl>, and note that changing the reference level changes the amplitude value of the top graticule line.
13. Press <Marker->>, <Mkr->CF> to move the 10 MHz peak to the center of the display.
14. Compare two signals on the same screen using Marker Delta.
    a. Press <Marker>, <Delta> (the label on the first marker now reads 1R, indicating that it is the reference point).
    b. Press <Peak Search>, <Next Peak> (The amplitude and frequency difference between the markers is displayed in the active function block).
15. Improve Frequency Accuracy.
    a. Press <Marker>, <Mkr Fctn>.
    b. Press <Marker Count>.
    c. Press <Freq Count> (The marker annotation changes from Mkr1 to Cntr1, and displayed frequency resolution improves).
16. Press BW/Avg, Res BW, then use knob to change resolution bandwidth value.
17. Use signal tracking and span zoom.
    a. Press <Preset> (if the softkeys <Factory Preset> and <User Preset appear>, select <Factory Preset>).
    b. Adjust signal generator output signal to 50 MHz.
    c. Press <FREQUENCY>, Start Freq, 20, MHz.
    d. Press <FREQUENCY>, Stop Freq, 1, GHz.
    e. Press <Peak Search>.
    f. Press <FREQUENCY>, <Signal Track> (On).
    g. Press <SPAN>, <2>, <0>, <0>, and <kHz>.
18. Disable signal generator output.
19. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Pressed < | > On key.	____	____
3. Allowed 5 minutes for warm-up.	____	____
4. Pressed <Preset> (if the softkeys <Factory Preset> and <User Preset> appeared, selected <Factory Preset>).	____	____
5. Connected signal generator output to spectrum analyzer front panel input using radio frequency (RF) cable.	____	____
6. Set signal generator for a 10 MHz, 0 dBm output.	____	____
7. Pressed <AMPLITUDE>, <1>, <0>, and <dBm>.	____	____
8. Pressed <FREQUENCY>, <Center Freq>, <3>, <0>, and <MHz>.	____	____
9. Observed the 10 MHz signal on the spectrum analyzer display.	____	____
10. Pressed <SPAN>, <5>, <0>, and <MHz>.	____	____
11. Read frequency and amplitude.	____	____
12. Changed Reference Level.	____	____
13. Pressed <Marker->>, <Mkr->CF> to move the 10 MHz peak to the center of the display.	____	____
14. Compared two signals on the same screen using Marker Delta.	____	____
15. Improved Frequency Accuracy.	____	____
16. Pressed BW/Avg, Res BW, then used knob to change resolution bandwidth value.	____	____
17. Used signal tracking and span zoom.	____	____
18. Disabled signal generator output.	____	____
19. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
TB 385-4	683XXC
TM 43-6625-914-12	ANRITSU 682XXB/683XXB
	DA PAM 750-8
	TM 9-6695-239-14

Repair Spectrum Analyzer
093-94H-1401

Conditions: In an operational environment (OE), given a faulty spectrum analyzer, signal generator, test equipment as needed (multimeter, oscilloscope, spectrum analyzer, etc.), electrician's tool kit, spectrum analyzer manufacturer's manual, and TB 385-4.

Standards: Repair spectrum analyzer in accordance with the applicable spectrum analyzer technical reference. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

NOTE:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the spectrum analyzer for any physical defects.
3. Read and follow the operator, maintenance, and repair instructions given in the applicable technical reference.
4. Set up equipment necessary for troubleshooting the spectrum analyzer.
5. Perform operational circuit checks to sectionalize the malfunction.
6. Perform schematic analysis and functional tests to localize the malfunction.
7. Perform resistance, continuity, and power distribution tests to isolate the malfunction.
8. Repair/replace faulty component.
9. Verify repair.
10. De-energize and disconnect equipment.
11. Complete proper maintenance forms.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the spectrum analyzer for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in the applicable technical reference.	____	____

Performance Measures	GO	NO-GO
4. Set up equipment needed for troubleshooting the spectrum analyzer.	____	____
5. Performed operational circuit checks to sectionalize the malfunction.	____	____
6. Performed a schematic analysis and functional tests to localize the malfunction.	____	____
7. Performed resistance, continuity, and power distribution tests to isolate the malfunction.	____	____
8. Repaired/replaced faulty component.	____	____
9. Verified repair.	____	____
10. De-energized and disconnected all the equipment.	____	____
11. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
TB 385-4	AR 750-1
TM 11-6625-3250-12	DA PAM 750-8
TM 43-6625-914-12	TB 43-180
	TB 750-25
	TM 9-6695-239-14

Calibrate Spectrum Analyzer

093-94H-1402

Conditions: In an operational environment (OE), given Spectrum analyzer (AN/USM-677) requiring calibration; TB 9-6625-2339-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2339-24; TB 43-180; TB 385-4, TB 750-25; and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate spectrum analyzer in accordance with TB 43-180 and TB 9-6625-2339-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

AN/USM-677 Spectrum Analyzer

Figure 3-41. AN/USM-677 Spectrum Analyzer

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Performance Steps

Note: Performance steps 4 through 19 are to be performed in accordance with TB 9-6625-2339-24.

4. Perform Preliminary instructions.

Note: Spectrum analyzer must sit with the power off for at least 60 minutes before performing task step 5.

5. Perform Equipment setup.
6. Perform Frequency Readout and Marker Frequency Count Accuracy check.
7. Perform Frequency Span Readout Accuracy check.
8. Perform Noise Sidebands check.
9. Perform Residual FM check.
10. Perform Input Attenuator Accuracy check.
11. Perform Reference Level Accuracy check.
12. Perform Resolution Bandwidth Switching Uncertainty check.
13. Perform Absolute Amplitude Accuracy check.
14. Perform Resolution Bandwidth Accuracy check.
15. Perform Frequency Response check.
16. Perform Displayed Average Noise check.
17. Perform Residual Responses check.
18. Perform Power supply performance check:
    a. Perform only if a parameter is out of tolerance.
    b. Repeat task steps 5 through 17.
19. Perform Final procedure.
20. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed Preliminary instructions.	____	____
5. Performed Equipment setup.	____	____
6. Performed Frequency Readout and Marker Frequency Count Accuracy check.	____	____
7. Performed Frequency Span Readout Accuracy check.	____	____

Performance Measures	GO	NO-GO
8. Performed Noise Sidebands check.	____	____
9. Performed Residual FM check.	____	____
10. Performed Input Attenuator Accuracy check.	____	____
11. Performed Reference Level Accuracy check.	____	____
12. Performed Resolution Bandwidth Switching Uncertainty check.	____	____
13. Performed Absolute Amplitude Accuracy check.	____	____
14. Performed Resolution Bandwidth Accuracy check.	____	____
15. Performed Frequency Response check.	____	____
16. Performed Displayed Average Noise check.	____	____
17. Performed Residual Responses check.	____	____
18. Performed Power supply performance check.	____	____
19. Performed Final procedure.	____	____
20. Disconnected and maintained equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6625-2339-24	
TM 43-6625-914-12	
USATA MASTER LIST	

Repair Radio Test Set (Basic)

093-94H-1409

Conditions: In an operational environment (OE), given a malfunctioning Radio Test Set (AN/GRM-114B or AN/GRM-122); electrician's tool kit, test equipment as needed (multimeter, oscilloscope, spectrum analyzer, and etc), TM 11-6625-3244-40, TM 11-6625-3245-40, TB 385-4, Radio Test Set manufacturer's service manual, TB 750-25, DA Form 2404 (Equipment Inspection and Maintenance Worksheet), and DA Form 7372 (TMDE Calibration and Repair Data).

Standards: Repair Radio Test Set in accordance with the applicable manufacturer's and technical manuals. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

Figure 3-42. AN/GRM-122 and AN/GRM-114B Radio Test Sets

NOTE:

-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

Performance Steps

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the radio test set for any physical defects.
3. Read and follow the operator, maintenance, and repair instructions given in TM 11-6625-3244-40, and Aeroflex TS-4317 and J-1601A / RPM-001 maintenance manuals.
4. Set up support equipment necessary to repair the radio test set.
5. Turn on Small Computer System Interface (SCSI).
   a. Press MTRS MODE key.
   b. Press "AUX" F6.
   c. Press 5 on DATA ENTRY keypad to select "5. External I/O".
   d. Press 3 on DATA ENTRY keypad to display the Configure SCSI sub-menu.
   e. Verify SCSI operation mode is ON. If OFF, press ENTER to toggle on.
   f. Press "ESC" F6 twice to return to Auxiliary Functions Menu.
6. Restore factory defaults.

   Note: Resetting Factory Defaults returns frequencies for most operation screens to 10.000 MHz, resets most meter ranges to Autorange and turns upper and lower limits off.

   a. Press RCL key while in Auxiliary Functions Menu.
   b. Press FIELD SELECT directional keys to move highlight to "10. Factory Defaults", and press ENTER.
   c. Verify Yes/No selection is Yes, and press ENTER.
7. Perform Self-test.

   Note: All external input connections must be removed from Test Set prior to performing Self Test
   If no Auxiliary Box is attached to SCSI port, disable SCSI port prior to performing Self Test.

   a. Press MTRS key.
   b. Press "AUX" F6.
   c. Press 4 on DATA ENTRY keypad.
   d. Press 1 on DATA ENTRY keypad.
   e. Use FIELD SELECT direction keys to find failed test.
   f. Press "Extend" F1 when submenu highlight is over failed test.
      (1) Record displayed values of failed tests (if any).
      (2) Perform tests on each submenu item (if any) by pressing list number on DATA ENTRY Keypad, and record results.
   g. Use FIELD SELECT directional keys to move through remainder of Self Test Menu.
   h. Repeat step 7e for each item that failed and record results of each Extended test.
8. Perform troubleshooting procedures in accordance with TM 11-6625-3244-40, Chapter 2, Section III.
   a. Follow the General Troubleshooting Guidelines of paragraph 2-7.
   b. Select symptom from Symptom Index.
   c. Refer to Table 2-1 for appropriate troubleshooting procedures.
9. Perform functional block diagram and schematic analysis to localize the malfunction.
10. Perform various checks and tests as outlined in "Troubleshooting" sections of the technical manual and manufacturer's manual to isolate the malfunction.
11. Take corrective action as prescribed in maintenance procedure.

Performance Steps

12. Verify operation of the radio test set.
13. De-energize and disconnect all equipment.
14. Complete proper maintenance forms.

Evaluation Preparation: Ensure all required equipment or appropriate substitutions are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the radio test set for any physical defects.	____	____
3. Read and followed the operator, maintenance, and repair instructions given in TM 11-6625-3244-40, and Aeroflex TS-4317 and J-1601A / RPM-001 maintenance manuals.	____	____
4. Set up support equipment necessary to repair the radio test set.	____	____
5. Turned on Small Computer System Interface (SCSI).	____	____
6. Restored factory defaults.	____	____
7. Performed Self-test.	____	____
8. Performed troubleshooting procedures in accordance with TM 11-6625-3244-40, Chapter 2, Section III.	____	____
9. Performed functional block diagram and schematic analysis to localize the malfunction.	____	____
10. Performed various checks and tests as outlined in "Troubleshooting" sections of the technical manual and manufacturer's manual to isolate the malfunction.	____	____
11. Took corrective action as prescribed in maintenance procedure.	____	____
12. Verified operation of radio test set.	____	____
13. De-energized and disconnected all the equipment.	____	____
14. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AEROFLEX J-1601A	AR 750-1
AEROFLEX TS-4317 MM	DA PAM 750-8
AEROFLEX TS-4317 OM	TM 9-6695-239-14
DA FORM 2404	
DA FORM 7372	
TB 385-4	
TB 750-25	
TM 11-6625-3244-40	
TM 11-6625-3245-40	

Calibrate Radio Test Set

093-94H-1410

Conditions: In an operational environment (OE), given a Radio Test Set (AN/GRM-122) requiring calibration, Forms, Records, Reports, Equipment, Accessories required as listed in TB 9-6625-2296-24, TB 43-180, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate radio test set in accordance with TB 9-6625-2296-24 and TB 43-180. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Figure 3-43. AN/GRM-122 and AN/GRM-114B Radio Test Sets

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.

Note: Perform steps 3 through 25 in accordance with TB 9-6625-2296-24.

3. Observe all safety precautions, warnings, hazards, and notes.
4. Perform preliminary instructions.

Performance Steps

5. Perform equipment setup.
6. Perform AF generator frequency performance check and make adjustments if necessary.
7. Perform AF generator output level performance check and make adjustments if necessary.
8. Perform distortion meter performance check and make adjustments if necessary.
9. Perform SINAD meter performance check and make adjustments if necessary.
10. Perform digital multimeter performance check and make adjustments if necessary.
11. Perform generator output level performance check and make adjustments if necessary.
12. Perform generator spectral purity performance check and make adjustments if necessary.
13. Perform generator residuals performance check and make adjustments if necessary.
14. Perform generator frequency performance check and make adjustments if necessary.
15. Perform oscilloscope performance check and make adjustments if necessary.
16. Perform spectrum analyzer performance check and make adjustments if necessary.
17. Perform power meter calibration performance check and make adjustments if necessary.
18. Perform generator amplitude modulation performance check and make adjustments if necessary.
19. Perform generator frequency modulation performance check and make adjustments if necessary.
20. Perform FM deviation meter (peak) performance check and make adjustments if necessary.
21. Perform amplitude modulation meter performance check and make adjustments if necessary.
22. Perform frequency error meter and RF counter performance check and make adjustments if necessary.
23. Perform AF counter performance check and make adjustments if necessary.
24. Perform power supply check if necessary, and make adjustments if necessary.
25. Perform final procedure.
26. Disconnect and maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary instructions.	____	____
5. Performed equipment setup.	____	____

6. Performed AF generator frequency performance check and made adjustments if necessary. ____ ____
7. Performed AF generator output level performance check and made adjustments if necessary. ____ ____
8. Performed distortion meter performance check and made adjustments if necessary. ____ ____
9. Performed distortion meter performance check and made adjustments if necessary. ____ ____
10. Performed digital multimeter performance check and made adjustments if necessary. ____ ____
11. Performed generator output level performance check and made adjustments if necessary. ____ ____
12. Performed generator spectral purity performance check and made adjustments if necessary. ____ ____
13. Performed generator residuals performance check and made adjustments if necessary. ____ ____
14. Performed generator frequency performance check and made adjustments if necessary. ____ ____
15. Performed oscilloscope performance check and made adjustments if necessary. ____ ____
16. Performed spectrum analyzer performance check and made adjustments if necessary. ____ ____
17. Performed power meter calibration performance check and made adjustments if necessary. ____ ____
18. Performed generator amplitude modulation performance check and made adjustments if necessary. ____ ____
19. Performed generator frequency modulation performance check and made adjustments if necessary. ____ ____
20. Performed FM deviation meter (peak) performance check and made adjustments if necessary. ____ ____
21. Performed amplitude modulation meter performance check and made adjustments if necessary. ____ ____
22. Performed frequency error meter and RF counter performance check and made adjustments if necessary. ____ ____
23. Performed AF counter performance check and made adjustments if necessary. ____ ____
24. Performed power supply check if necessary, and made adjustments if necessary. ____ ____
25. Performed final procedure. ____ ____
26. Disconnected and maintained equipment. ____ ____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 7372	AEROFLEX J-1601A
DA LABEL 80	AEROFLEX TS-4317 MM
TB 385-4	AEROFLEX TS-4317 OM
TB 43-180	AR 750-1
TB 750-25	AR 750-43
TB 9-6625-2296-24	DA FORM 2417
TM 11-6625-3244-40	DA LABEL 163
TM 11-6625-3245-40	DA PAM 750-8
USATA MASTER LIST	TM 9-6695-239-14

Operate High Radio Frequency (RF) Power Measurement System

093-94H-1420

Conditions: In an operational environment, with a requirement to operate a High RF Power Measurement System, wideband RF power amplifier (ARA757LC-CE) and RF power wattmeter (4421), signal generator, high power RF termination, RF cables as required, manufacturer's manuals, and TB 385-4.

Standards: Operate High Radio Frequency (RF) Power Measurement System in accordance with the manufacturer's manuals. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

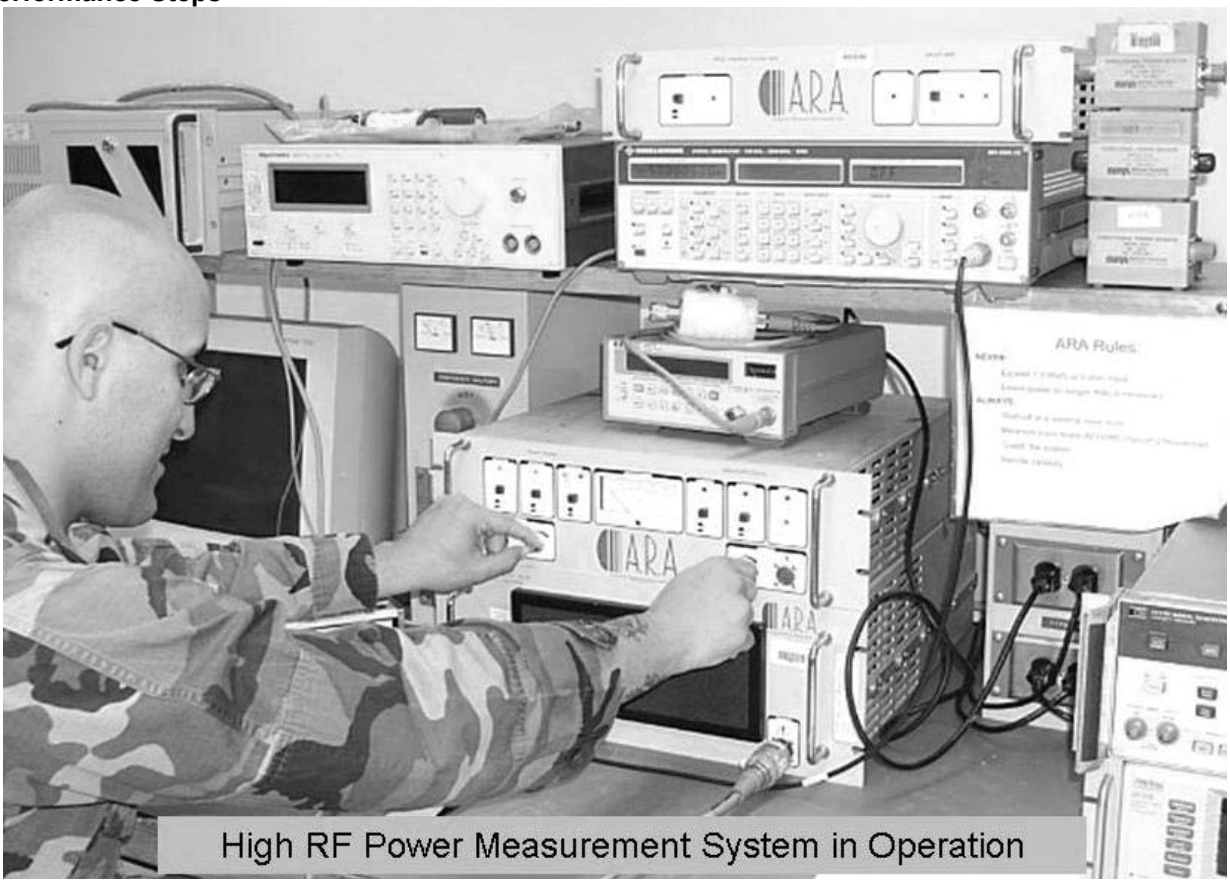


Figure 3-44. Measuring High RF power

CAUTION: Potential for severe equipment damage exists. Exercise caution when applying RF power. Terminate all RF connections with appropriate loads.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Prepare RF power measurement system for use.
   a. Prepare RF power wattmeter 4421 for use to measure forward power in watts.
   b. Prepare wideband RF power amplifier ARA757LC-CE for operation using signal generator as a signal source and high power RF cables at power amplifier output connector.
   c. Connect power amplifier output to RF power wattmeter directional coupler assembly (sensor) and terminate with a suitable high power RF termination.

3. Operate RF power measurement system.
    a. Ensure wideband RF power amplifier Input Blanking pushbutton was pressed in and the red LED is lit.
    b. Ensure wideband RF power amplifier RF Gain Control rotary switch is set to minimum (fully CCW).
    c. Set frequency of signal source.
    d. Set amplitude of signal source.
    e. Set signal source RF output switch to ON.
    f. Set wideband RF power amplifier Input Blanking pushbutton to off (out) ensuring red LED is not lit.
    g. Monitor RF power indication on RF power wattmeter (do not trust RF power indication on wideband RF power amplifier) while slowly rotating wideband RF power amplifier RF Gain Control rotary switch clockwise until RF power wattmeter indicates approximately 10W of forward RF power.
    h. Monitor RF power indication on RF power wattmeter and slowly increase or decrease signal generator amplitude in small magnitude steps until RF power wattmeter indicates 10.0W of forward RF power.
    i. Set RF power wattmeter 4421 to measure reflected power while observing the indication.
    j. Decrease RF power output to minimum by rotating RF Gain Control rotary switch fully CCW.
    k. Press RF power amplifier Input Blanking pushbutton in and ensure red LED is lit.
4. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Potential for severe equipment damage exists due to the high level of RF energy available at the output of the amplifier. Evaluator must supervise operations closely.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Prepared radio frequency (RF) power measurement system for use.	____	____
3. Operated RF power measurement system.	____	____
4. De-energized and disconnected equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
BIRD MODEL 4421 MANUFACTURER'S MANUAL	DA PAM 750-8
TB 385-4	TM 9-6695-239-14

Calibrate Radar Test Set

093-94H-1431

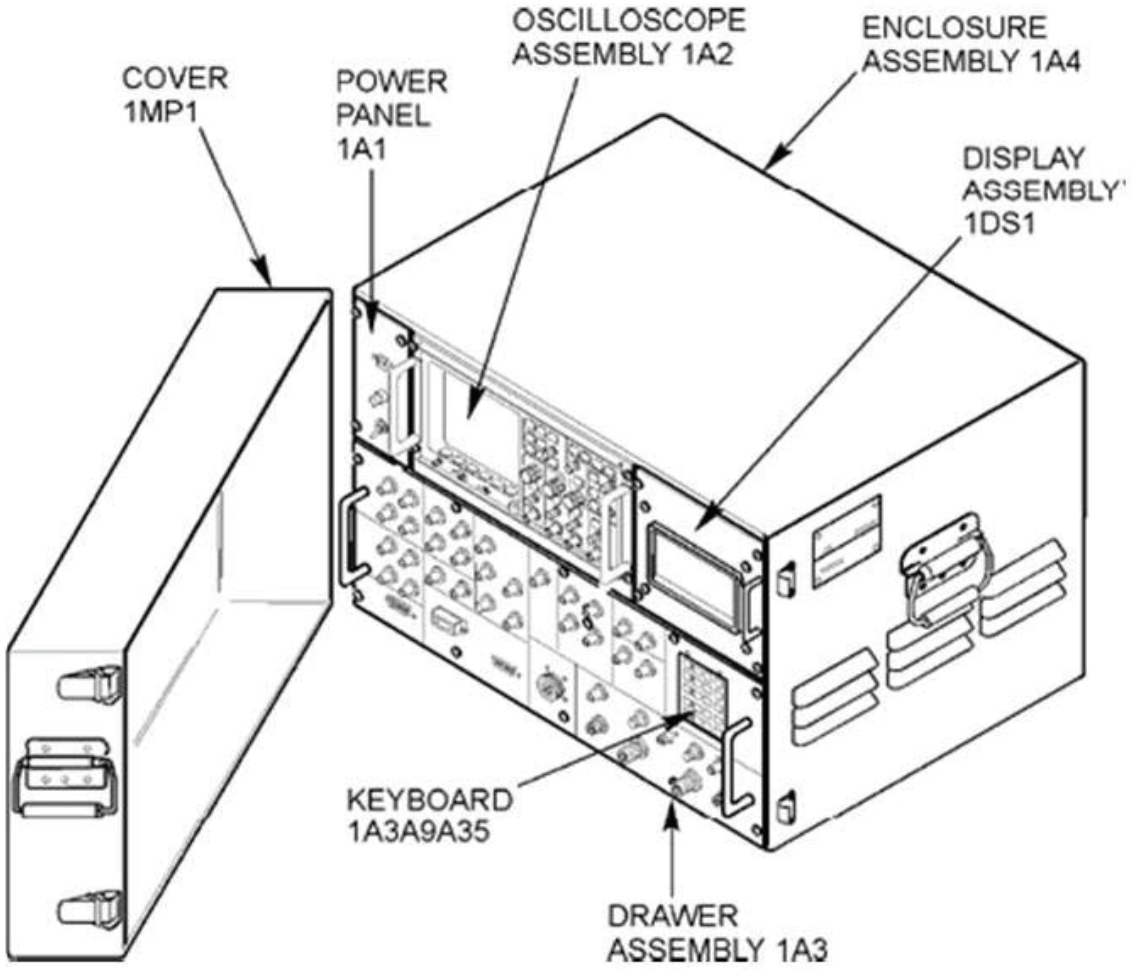
Conditions: In an operational environment (OE), given Radar Test set requiring calibration, applicable calibration procedure, Forms, Records, and Reports and Equipment and Accessories required as listed in calibration procedure; TB 43-180, TB 385-4, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate radar test set in accordance with TB 43-180 and applicable calibration procedure. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Figure 3-45. Radar Test Sets

Performance Steps



AN/UPM-155 Radar Test Set with Components

Figure 3-46. AN/UPM-155 Radar Test Set

1. Observe all safety precautions, warnings, hazards, and notes.
2. Prepare AN/UPM-155 for use and enter TRANSPONDER MENUS from the TOP LEVEL MENU.
3. Measure various outputs from AN/UPM-155 using 54602A oscilloscope.
    a. Measure SUPPR OUT signal for pulse amplitude and pulse width.
    b. Measure ACP OUT for risetime and falltime.
    c. Setup external trigger using pulse generator and set 0 TRIGGER to EXTERNAL+ using MENU 14.
    d. Measure pulse delay from the external trigger at EXT IN to 0 TRIGGER.
    e. Reset 0 TRIGGER to INTERNAL.
    f. Setup and measure M4 PRE OUT signal for pulse amplitude, width, and pulse delay from 0 TRIGGER.
    g. Vary delay of M4 PRE OUT pulse from 0 TRIGGER using MENU 5.

Performance Steps

h. Setup and measure VAR PULSE OUT signal for pulse amplitude, width, and delay from 0 TRIGGER.
i. Vary delay of VAR PULSE output from 0 TRIGGER using MENU 6.
j. Setup and measure pulses at CHAL/TAG output to determine challenge mode.
k. Set M2 reply to ON using MENU 6.
l. Setup and measure pulses at FIRST REPLY output and determine reply.
m. Connect a 10W continuous wave input to MAIN RF IN/OUT using High Radio Frequency (RF) Power Measurement System.
n. Measure input to MAIN RF IN/OUT using MENU 16.

4. Measure various outputs from AN/UPM-155 using spectrum analyzer.
   a. Setup MAIN RF IN/OUT output signal frequency to 1050 MHz and amplitude to -30 dBm using MENU 10 and MENU 11.
   b. Display MAIN RF IN/OUT output signal using spectrum analyzer.
   c. Setup 1030 MHz OUT signal using MENU 10 and display output on spectrum analyzer.
   d. Setup 60 MHz OUT signal using MENU 10 and MENU 11 and display output on spectrum analyzer.
5. De-energize and disconnect equipment.
6. Identify correct calibration procedure to be used in accordance with TB 43-180.
7. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
8. Observe all safety precautions, warnings, and hazards.
9. Perform Equipment Setup.
10. Perform PRF/PRI and Delays performance check.
11. Perform VAR Pulses 1 and 2 performance check.
12. Perform CHAL and TAG Gen performance check.
13. Perform Mode Repeat performance check.
14. Perform 1st SIF Reply Video performance check.
15. Perform Second Reply performance check.
16. Perform Suppression Gate performance check.
17. Perform Mode 4 Pretrig Out performance check.
18. Perform Mode 4 GTC Trig Out performance check.
19. Perform Video Reset Output performance check.
20. Perform Reply Signal Gating performance check.
21. Perform Mixed Video performance check.
22. Perform M4 KIR Simulator performance check.
23. Perform M4 KIT Simulator performance check.
24. Perform Measurement performance check.
25. Perform RF Section performance check.
26. Perform Modulation performance check.

Performance Steps

27. Perform Out Main/Aux performance check.
28. Perform High Power In performance check.
29. Perform Final Procedure.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Prepared AN/UPM-155 for use and entered TRANSPONDER MENUS from the TOP LEVEL MENU.	____	____
2. Measured various outputs from AN/UPM-155 using 54602A oscilloscope.	____	____
3. Measured various outputs from AN/UPM-155 using spectrum analyzer.	____	____
4. De-energized and disconnected equipment.	____	____
5. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
6. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
7. Observed all safety precautions, warnings, and hazards.	____	____
8. Performed Equipment Setup.	____	____
9. Performed PRF/PRI and Delays performance check.	____	____
10. Performed VAR Pulses 1 and 2 performance check.	____	____
11. Performed CHAL and TAG Gen performance check.	____	____
12. Performed Mode Repeat performance check.	____	____
13. Performed 1st SIF Reply Video performance check.	____	____
14. Performed Second Reply performance check.	____	____
15. Performed Suppression Gate performance check.	____	____
16. Performed Mode 4 Pretrig Out performance check.	____	____
17. Performed Mode 4 GTC Trig Out performance check.	____	____
18. Performed Video Reset Output performance check.	____	____
19. Performed Reply Signal Gating performance check.	____	____
20. Performed Mixed Video performance check.	____	____
21. Performed M4 KIR Simulator performance check.	____	____
22. Performed M4 KIT Simulator performance check.	____	____
23. Performed Measurement performance check.	____	____
24. Performed RF Section performance check.	____	____
25. Performed Modulation performance check.	____	____
26. Performed Out Main/Aux performance check.	____	____

Performance Measures	GO	NO-GO
27. Performed High Power In performance check.	____	____
28. Performed Final Procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 7372	AR 750-1
DA LABEL 80	AR 750-43
TB 385-4	DA FORM 2417
TB 43-180	DA LABEL 163
TB 750-25	DA PAM 750-8
TB 9-6625-2337-24	TM 43-6625-912-12
TB 9-6625-2355-24	TM 9-6695-239-14
USATA MASTER LIST	

Subject Area 6: Physical-Dimensional and Aviation

Calibrate Linear Measurement Devices
093-94H-1103

Conditions: In an operational environment (OE), given Linear Measurement Devices requiring calibration: inside micrometers, vernier calipers, micrometer calipers; TB 9-5210-204-24, TB 9-5210-207-24, TB 9-5210-208-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-5210-207-24, TB 9-5210-208-24, TB 9-5210-209-24, and TB 9-5210-204-24; manufacturer's manuals, TB 43-180, TB 385-4, and TB 750-25.

Standards: Calibrate Linear Measurement Devices in accordance with TB 43-180 and the applicable calibration procedures. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

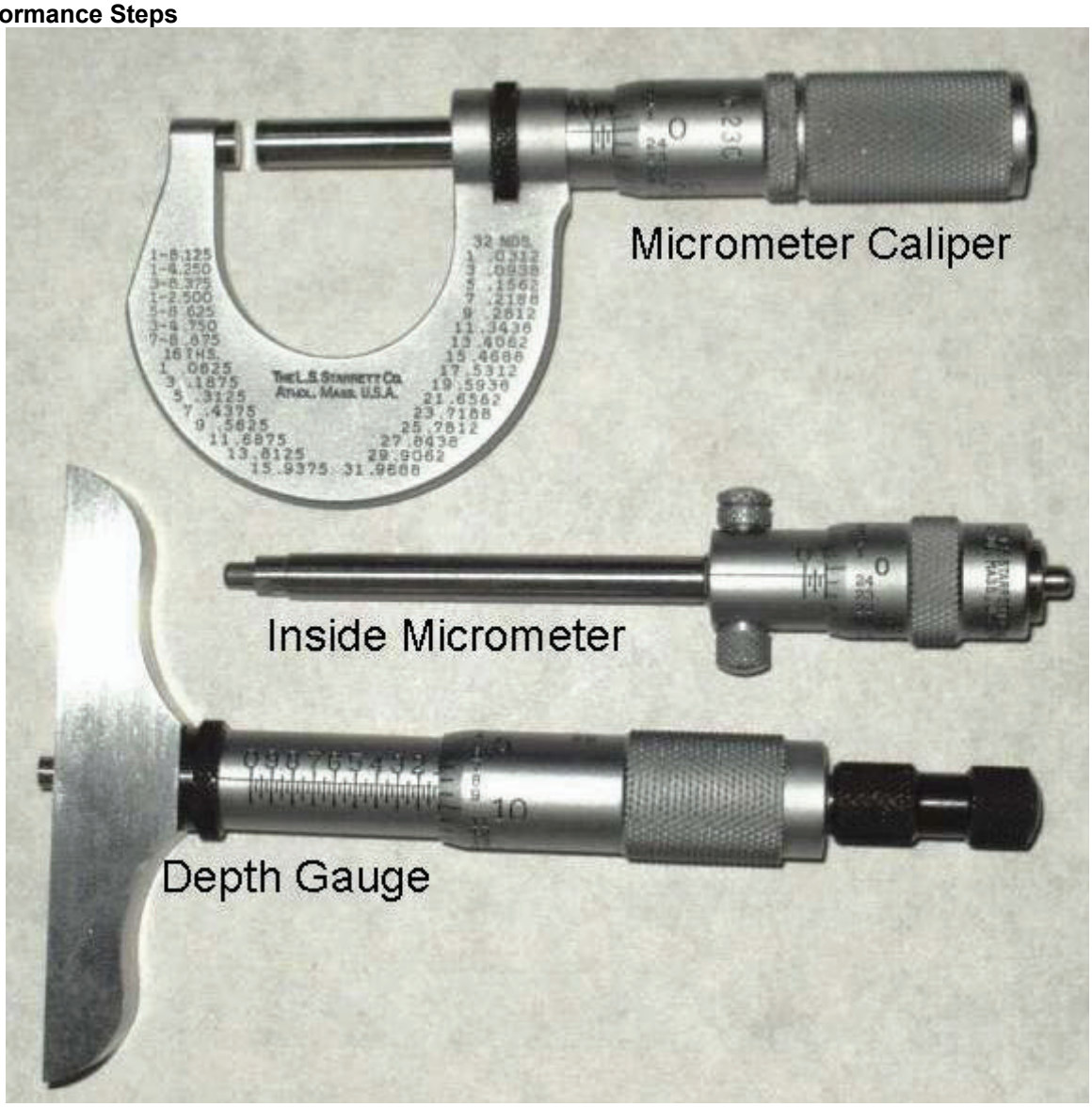


Figure 3-47. Caliper, Inside Micrometer, and Depth Gauge

1. Visually inspect the linear measurement devices for any physical defects.
2. Identify the correct calibration procedures to be used in accordance with TB 43-180.
3. Update calibration procedures as necessary in accordance with USATA Calibration Procedure Master List.
4. Observe all safety precautions, warnings, hazards, and notes.
5. Calibrate inside micrometer as follows:
   a. Perform Preliminary Instructions.
   b. Perform Equipment Setup.
   c. Perform Micrometer Head Calibration performance check, and adjust if necessary.
   d. Perform Length Calibration performance check, and adjust if necessary.
   e. Perform Final Procedure.
6. Calibrate vernier caliper as follows:
   a. Perform Preliminary Instructions.
   b. Perform Equipment Setup.

Performance Steps

c. Perform Outside Scale performance check, and adjust if necessary.
d. Perform Inside Scale performance check, and adjust if necessary.
e. Perform Final Procedure.

7. Calibrate micrometer caliper as follows:
   a. Perform Preliminary instructions.
   b. Perform Equipment Setup.
   c. Perform Parallelism performance check (if necessary).
   d. Perform Zero Check performance check, and adjust if necessary.
   e. Perform Length measurement for micrometers without adjustable mandrels and checking standards performance check if appropriate.
   f. Perform Length measurement for micrometers with adjustable mandrels and checking standards performance check if appropriate.
   g. Perform Final Procedure.
8. Maintain tools and equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Visually inspected the linear measurement devices for any physical defects.	____	____
2. Identified correct calibration procedures to be used in accordance with TB 43-180.	____	____
3. Updated calibration procedures as necessary in accordance with USATA Calibration Procedure Master List.	____	____
4. Observed all safety precautions, warnings, and hazards.	____	____
5. Calibrated inside micrometer.	____	____
6. Calibrated vernier caliper.	____	____
7. Calibrated micrometer caliper.	____	____
8. Maintained tools and equipment.	____	____

Evaluation Guidance: Refer to the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-5210-204-24	
TB 9-5210-207-24	
TB 9-5210-208-24	
TB 9-5210-209-24	
USATA MASTER LIST	

Calibrate Thermometer

093-94H-1501

Conditions: In an operational environment (OE), given a thermometer requiring calibration, TB 9-6685-314-24, Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6685-314-24; TB 43-180, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate thermometer in accordance with TB 9-6685-314-24 and TB 43-180. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25. Prepare correction chart, if applicable.

Performance Steps

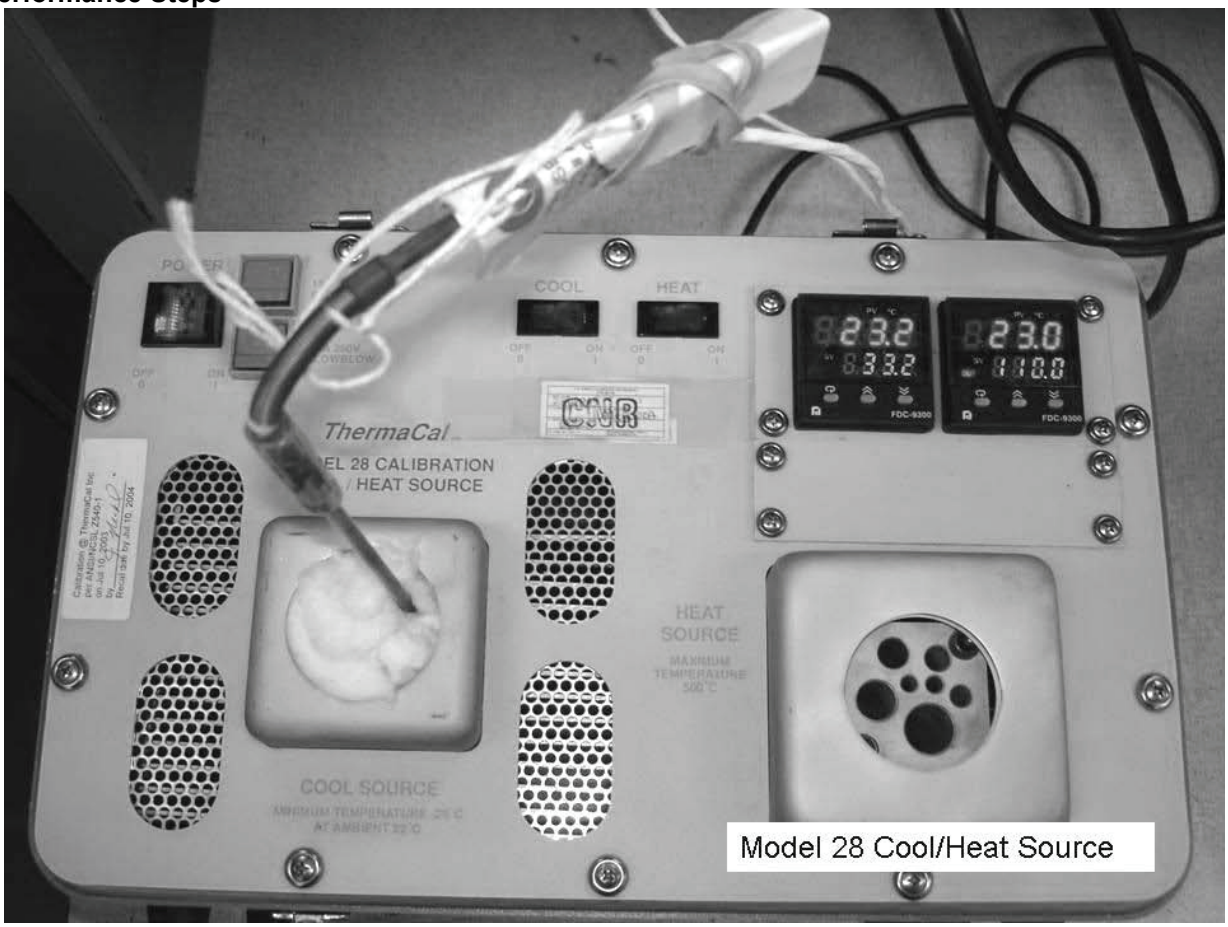


Figure 3-48. Model 28 Cool/Heat Source

Performance Steps

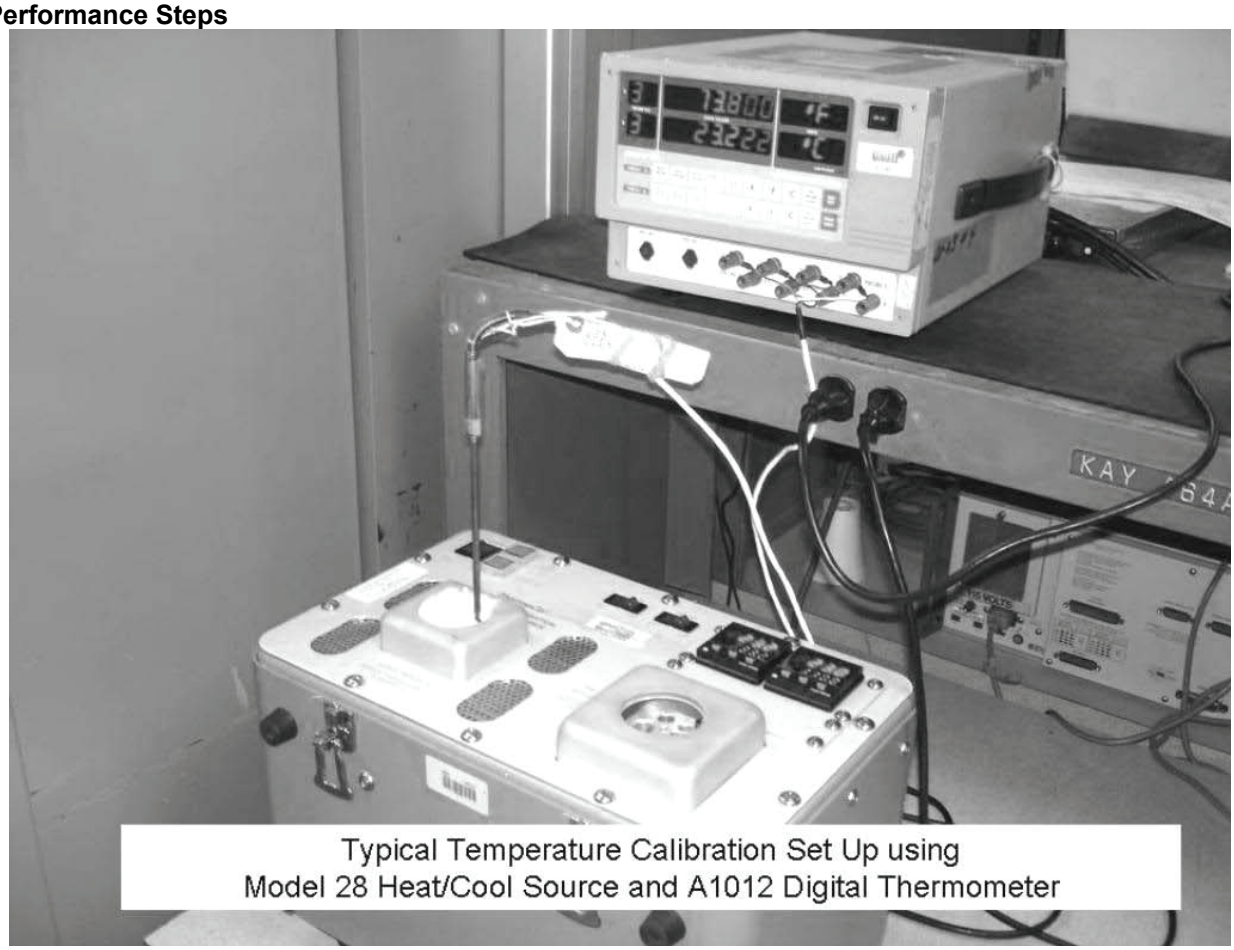


Figure 3-49. Typical Temperature Calibration Set-Up

Performance Steps

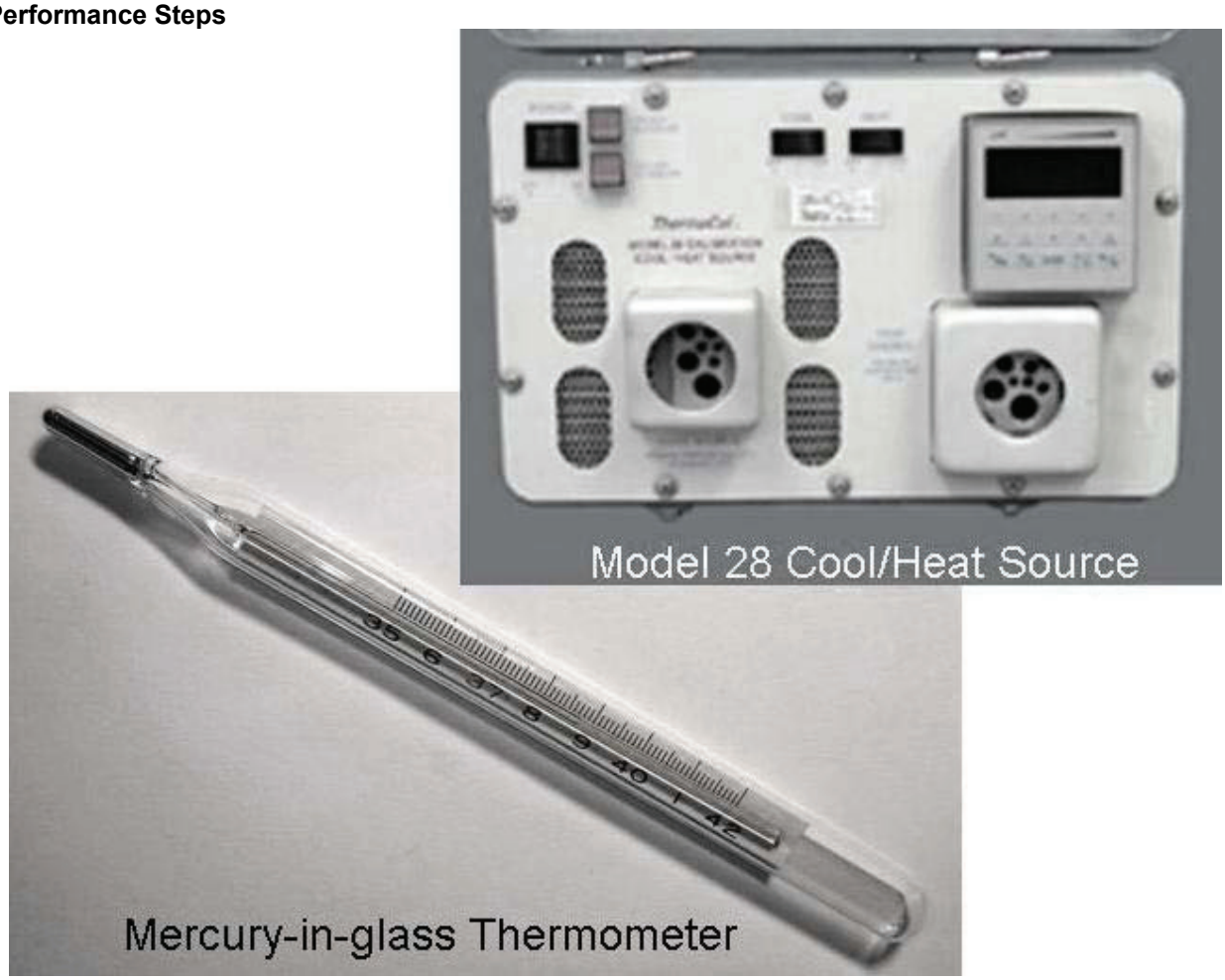


Figure 3-50. Model 28 Top View and Thermometer that can be inserted

1. Observe all safety precautions, warnings, hazards, and notes.
2. Read and follow the operating instructions in applicable manufacturer's manual before applying power to the temperature workstation.
3. Operate temperature workstation as follows:
    a. Insert probe into tightest fitting cavity before heating or cooling if possible.
    b. Insert probe into hole to depth of 5.25 inches.
    c. Ensure a depth of at least 0.75 inches for entire active area of the sensor of a short probe when unable to achieve the depth of 5.25 inches.
    d. Use calibrated readout device for probe.
    e. Allow probe and chamber temperature to stabilize.
    f. Use insulation if available.
    g. Key in setpoint temperatures from the front panel keyboard and turn the Cool Switch and Heat Switch ON and OFF to activate the sources.
    h. Display Cool Source and Heat Source temperatures.
    i. Display summary screen.
    j. Change Cool Source and Heat Source setpoints.
4. De-energize and disconnect equipment.
5. Identify correct calibration procedure to be used in accordance with TB 43-180.

Performance Steps

6. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
7. Observe all safety precautions, warnings, and hazards.
8. Perform preliminary instructions.
9. Perform equipment setup.
10. Perform ambient temperature performance check, and prepare correction chart if necessary.
11. Perform boiling point performance check, and prepare correction chart if necessary.
12. Perform final procedure.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Read and followed the operating instructions in applicable manufacturer's manual before applying power to the temperature workstation.	____	____
3. Operated temperature workstation.	____	____
4. De-energized and disconnected equipment.	____	____
5. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
6. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
7. Observed all safety precautions, warnings, and hazards.	____	____
8. Performed preliminary instructions.	____	____
9. Performed equipment setup.	____	____
10. Performed ambient temperature performance check, and prepared correction chart if necessary.	____	____
11. Performed boiling point performance check, and prepared correction chart if necessary.	____	____
12. Performed final procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	

References

Required	Related
TB 43-180	
TB 750-25	
TB 9-6685-314-24	
THERMACAL INC MODEL 28	
USATA MASTER LIST	

Operate Force Torque Standard

093-94H-1510

Conditions: In an operational environment (OE), with a requirement to operate an MGCPlus Force Torque Standard, torque cells, various type torque wrenches, Manufacturer's Manuals, and TB 385-4.

Standards: Operate the force torque standard in accordance with applicable technical reference. Observe all safety precautions in accordance with TB 385-4.

Performance Steps

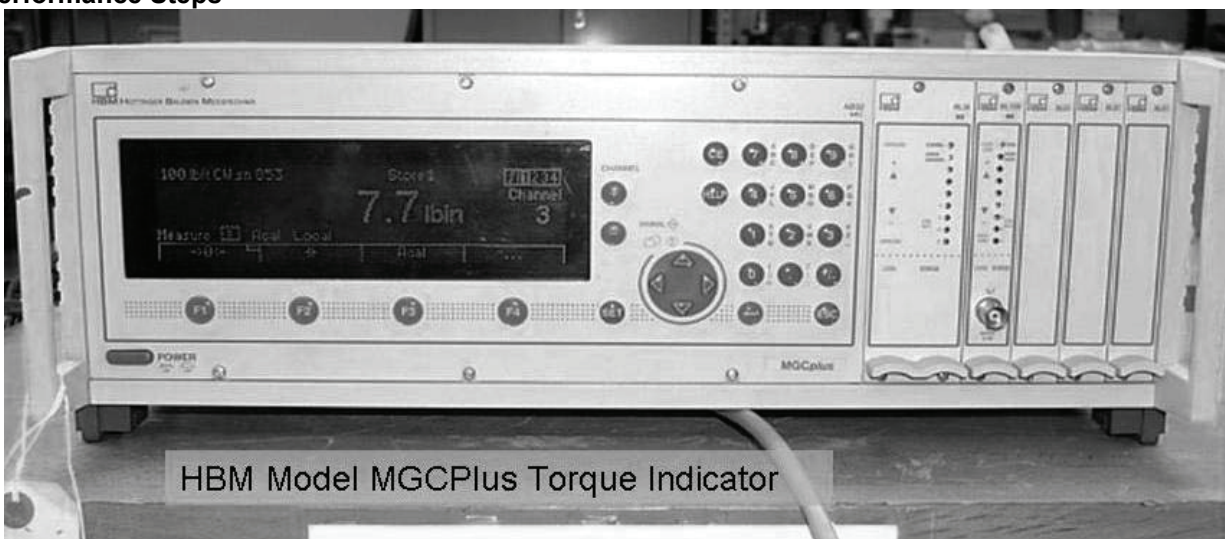


Figure 3-51. MGCPlus Torque Indicator

1. Observe all safety precautions, warnings, hazards, and notes.
2. Visually inspect the force/torque standard and torque wrenches for any physical defects.
3. Read and follow the operator's instructions given in manufacturer's manual.
4. Select appropriate torque cell (or cells) for checking the full range of the torque wrench used as the test instrument (TI).
5. Mount the torque cell on the calibration fixture. Orient the cell so the cable hangs somewhere between the 6 o'clock and 7 o'clock position, or at a position designated on the cell itself.

> ***Note: On 20 ft/lb and smaller cells, support the bulk of the cable in a way that does not add any clockwise or counter-clockwise torque load to the cell.***

6. Connect the torque cell cable to the ML10B amplifier plug-in input connector on the rear of the force/torque standard.
7. Connect the force/torque standard to 115 V A/C power source.
8. Turn on the force/torque by pressing the POWER button.

> ***Note: If the torque standard was powered off for more than 30 minutes, allow 30 minutes of warm up time before proceeding.***

9. Press the CHANNEL + button to switch to Channel 3.
10. Press the up or down SIGNAL button to indicate "Gross" on the display.

Performance Steps

11. Press the F4 button to show the Transducer selection soft keys above the F2 and F3 buttons.
12. Press either the F2 or F3 button to select the indication that matches the attached torque cell.
13. Press the F4 button to show the Units selection soft keys above the F2 and F3 buttons.
14. Press either the F2 or F3 button to select the units of torque reading to match the TI.
15. Exercise torque cell using socket wrench:
    a. Attach socket wrench to torque cell.
    b. Slowly apply torque in a clockwise direction until full scale of the torque cell is indicated on the display.
    c. Slowly release torque back to an approximate zero indication.
    d. Repeat exercise two more times.
16. Exercise TI (full scale).

WARNING: DO NOT OVERTORQUE THE TORQUE CELL: CHANGE TORQUE CELLS AS NECESSARY.

    a. Attach TI to torque cell.
    b. Apply torque slowly in a clockwise direction until full scale of TI is reached.

WARNING: DO NOT OVERTORQUE THE TORQUE CELL: CHANGE TORQUE CELLS AS NECESSARY.

    c. Released torque slowly back to an approximate zero indication.
    d. Repeat exercise two more times.

17. Pressed F4 to display the ->0<- (Zero), -||- (Clear Store), and ACAL softkeys.

Note: Ensure the ACAL indicator is on by pressing the F3 button if necessary.

18. Ensure the force/torque standard is in "Gross" mode for zeroing. Press SIGNAL button to place standard into "Gross" mode if necessary.
19. Press F1 to zero the indication on the force/torque standard.
20. Use appropriate signal mode for particular type of torque wrench:
    a. Use the "Store 1" signal mode for non-snap type torque wrenches.
    b. Use "1st Peak Hold" signal mode for snap type torque wrenches.
21. Apply torque in clockwise direction and obtain readings on torque/force standard display of 20, 60, and 100 percent of the range of the TI. Change torque cells as necessary to accommodate range of TI.
22. Disconnect, maintain, and store equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Visually inspected the force/torque standard and torque wrenches for any physical defects.	____	____
3. Read and followed the operator's instructions given in manufacturer's manual.	____	____
4. Selected appropriate torque cell (or cells) for checking the full range of the torque wrench used as the test instrument (TI).	____	____

Performance Measures	GO	NO-GO
5. Mounted the torque cell on the calibration fixture. Oriented the cell so the cable hung down somewhere between the 6 o'clock and 7 o'clock position, or at a position designated on the cell itself.	____	____
6. Connected the torque cell cable to the ML10B amplifier plug-in input connector on the rear of the force/torque standard.	____	____
7. Connected the force/torque standard to 115 V A/C power source.	____	____
8. Turned on the force/torque by pressing the POWER button.	____	____
Note: If the torque standard was powered off for more than 30 minutes, allowed 30 minutes of warm up time before proceeding.		
9. Pressed the CHANNEL + button to switch to Channel 3.	____	____
10. Pressed the up or down SIGNAL button to indicate "Gross" on the display.	____	____
11. Pressed the F4 button to show the Transducer selection soft keys above the F2 and F3 buttons.	____	____
12. Pressed either the F2 or F3 button to select the indication that matches the attached torque cell.	____	____
13. Pressed the F4 button to show the Units selection soft keys above the F2 and F3 buttons.	____	____
14. Pressed either the F2 or F3 button to select the units of torque reading to match the TI.	____	____
15. Exercised torque cell (full scale) using socket wrench.	____	____
16. Exercised TI three times (full scale).	____	____
17. Pressed F4 to display the ->0<- (Zero), -||- (Clear Store), and ACAL softkeys.	____	____
18. Ensured the force/torque standard was in "Gross" mode for zeroing. Pressed SIGNAL button to place standard into "Gross" mode if necessary.	____	____
19. Pressed F1 to zero the indication on the force/torque standard.	____	____
20. Used appropriate signal mode for particular type of torque wrench.	____	____
21. Applied torque in clockwise direction and obtained readings on torque/force standard display of 20, 60, and 100 percent of the range of the TI. Changed torque cells as necessary.	____	____
22. Disconnected, maintained, and stored equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
MANUFACTURER'S MANUAL	DA PAM 750-8
TB 385-4	TB 750-25
	TM 9-6695-239-14

Calibrate Torque Wrench

093-94H-1511

Conditions: In an operational environment (OE), given torque wrench requiring calibration, TB 9-5120-202-24, Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-5120-202-24; TB 43-180, TB 385-4, TB 750-25, Manufacturer's manual, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate torque wrench in accordance with TB 43-180 and TB 9-5120-202-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

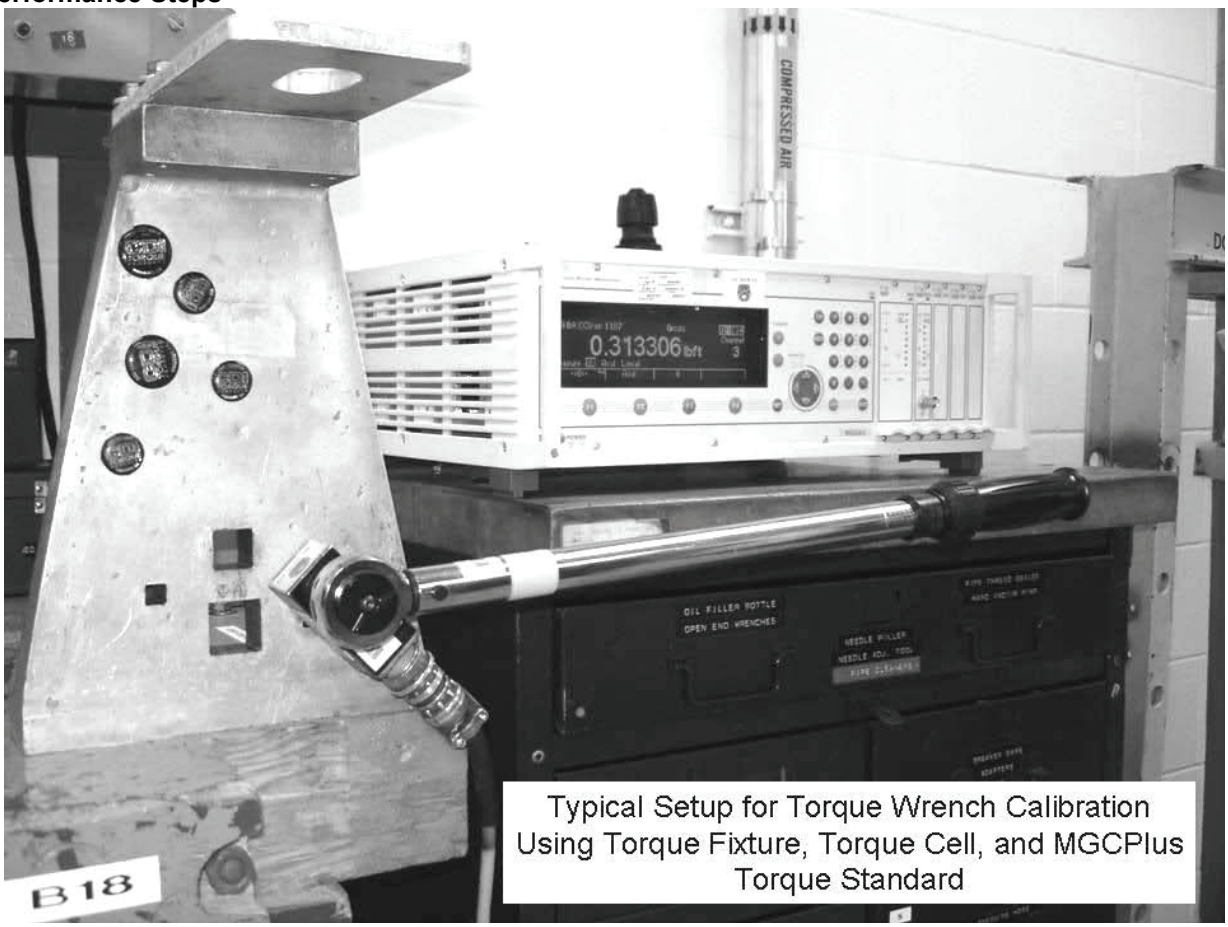


Figure 3-52. Typical Torque Measurement Set-Up

1. Visually inspect the torque wrench for any physical defects.
2. Identify the correct calibration procedure to be used in accordance with TB 43-180.
3. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
4. Observe all safety precautions, warnings, and hazards.
5. Calibrate torque wrench as follows using force torque standard:

Performance Steps

a. Perform preliminary instructions.
b. Perform appropriate performance check dependent on torque wrench type and make adjustments if necessary.

6. Perform final procedure.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Visually inspected the torque wrench for any physical defects.	____	____
2. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
3. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
4. Observed all safety precautions, warnings, and hazards.	____	____
5. Calibrated torque wrench as follows using force torque standard: a. Performed preliminary instructions. b. Performed appropriate performance check dependent on torque wrench type, and made adjustments if necessary.	____	____
6. Performed final procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	DA PAM 750-8
DA LABEL 163	TM 9-6695-239-14
DA LABEL 80	
MANUFACTURER'S MANUAL	
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-5120-202-24	

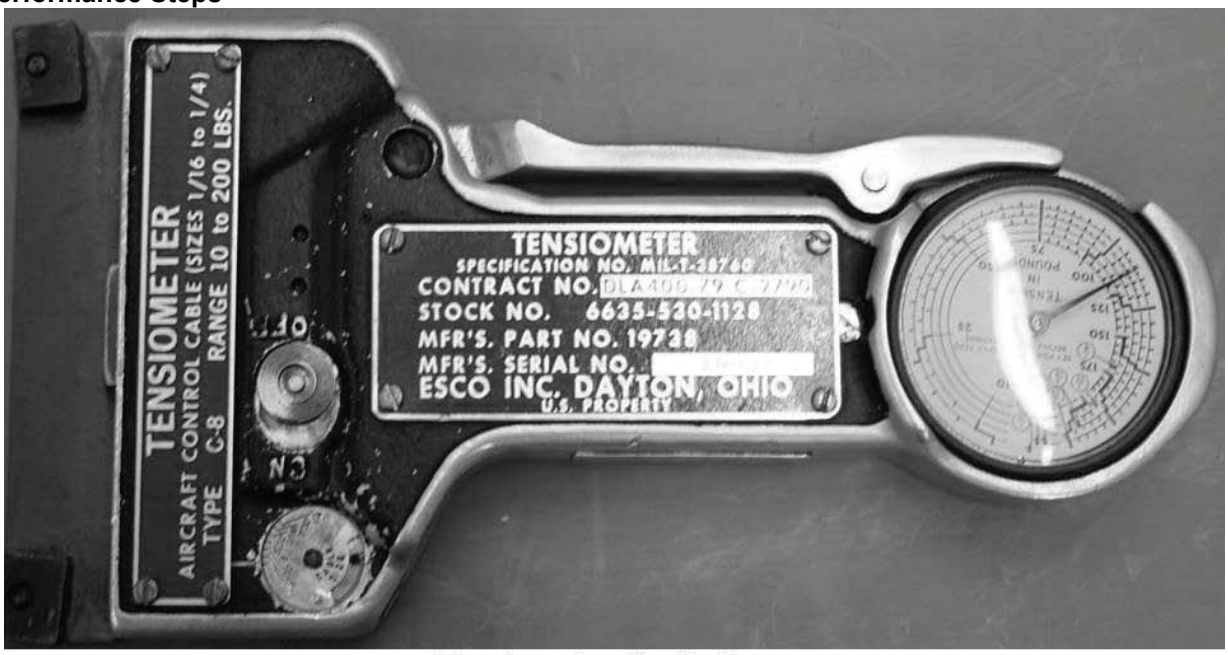
Calibrate Tensiometer

093-94H-1512

Conditions: In an operational environment (OE), given Tensiometer (dial indicating MIL-T-7638 or MIL-T-38760) requiring calibration, TB 9-6635-203-24, forms, records, reports, equipment, and accessories required as listed in TB 9-6635-203-24; TB 43-180, TB 385-4, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate Tensiometer in accordance with TB 43-180 and TB 9-6635-203-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

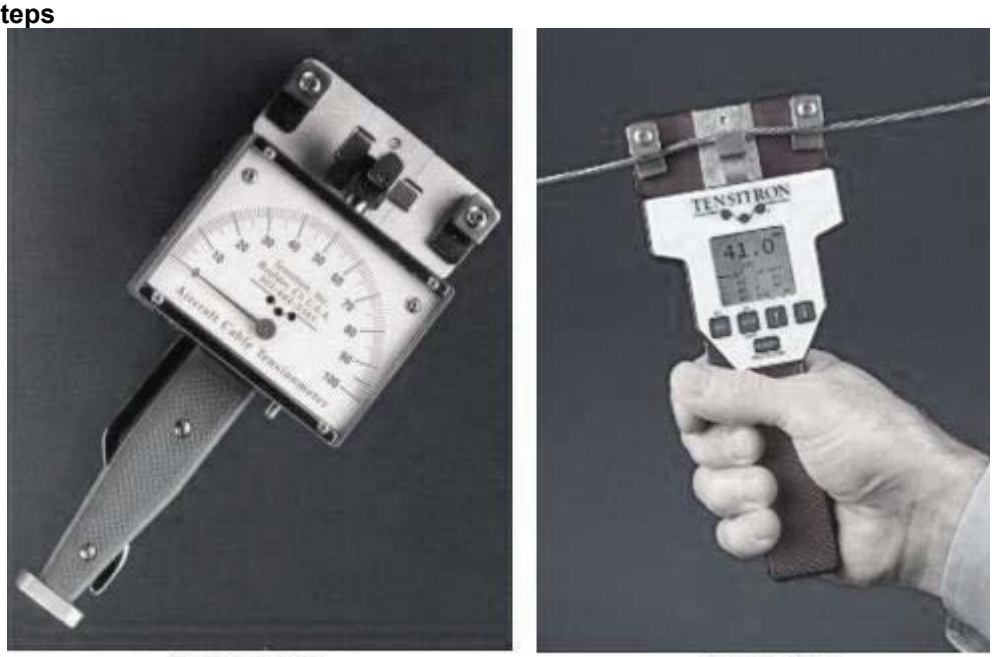
Performance Steps



Tensiometer (typical)

Figure 3-53. Tensiometer

Performance Steps



(typical)

Figure 3-54. Analog and Digital Cable Tensiometers

1. Visually inspect the Tensiometer for any physical defects.
2. Identify the correct calibration procedure to be used in accordance with TB 43-180.
3. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
4. Observe all safety precautions, warnings, and hazards.
5. Perform preliminary instructions.
6. Perform equipment setup.
7. Perform Tensiometer accuracy (Dial Indicating Tensiometer) performance check.
8. Perform final procedure.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Visually inspected the Tensiometer for any physical defects.	____	____
2. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
3. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
4. Observed all safety precautions, warnings, and hazards.	____	____
5. Performed preliminary instructions.	____	____

Performance Measures	GO	NO-GO
6. Performed equipment setup.	____	____
7. Performed Tensiometer accuracy (Dial Indicating Tensiometer) performance check.	____	____
8. Performed final procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6635-203-24	
USATA MASTER LIST	

Calibrate Weighing Scale

093-94H-1513

Conditions: In an operational environment (OE), given weighing scale (Resiliency Tester) requiring calibration, TB 9-6670-251-24, Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6670-251-24; TB 43-180, TB 385-4, TB 750-25, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate weighing scale in accordance with TB 43-180 and TB 9-6670-251-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Figure 3-55. Typical Weighing Scales

1. Visually inspect the weighing scale for any physical defects.
2. Identify correct calibration procedure to be used in accordance with TB 43-180.
3. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
4. Observe all safety precautions, warnings, hazards, and notes.

Performance Steps

5. Perform preliminary instructions.
6. Perform equipment setup.
7. Perform appropriate performance check dependent on Resiliency Tester type.
8. Perform final procedure.

Evaluation Preparation: Ensured all required equipment or appropriate substitutions were on hand and all safety requirements were being met.

Performance Measures	**GO**	**NO-GO**
1. Visually inspected the weighing scale for any physical defects.	____	____
2. Identified TB 9-6670-251-24 as correct calibration procedure to be used in accordance with TB 43-180.	____	____
3. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
4. Observed all safety precautions, warnings, hazards, and notes.	____	____
5. Performed preliminary instructions.	____	____
6. Performed equipment setup.	____	____
7. Performed appropriate performance check dependent on Resiliency Tester type.	____	____
8. Performed final procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6670-251-24	
USATA MASTER LIST	

Calibrate Pressure/Vacuum Gauges

093-94H-1521

Conditions: In an operational environment (OE), given pressure and vacuum gauges requiring calibration, TB 9-6685-319-24 or TB 9-6685-327-35; forms, records, reports, equipment, and accessories required as listed in TB 9-6685-319-24 or TB 9-6685-327-35; TB 43-180; TB 385-4; TB 750-25; and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate pressure and vacuum gauges in accordance with TB 43-180 and TB 9-6685-319-24 or TB 9-6685-327-35. Observe all safety precautions in accordance with AR 700-68 and TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

1. Read TB 385-4, Paragraph 6-2.c. and review AR 700-68 at least annually before working with or handling pressurized gas cylinders.
2. Ensure no more than two cylinders of the same gas are at a workstation at any one time.
3. Ensure empty cylinders were removed from the workstation.
4. Check the identity of the gas by reading the label or other markings on the cylinder before using.
5. Check gas cylinder for the correct cylinder color, the correct band size and color, the correct DOT colored tag, and the correct title.
6. Do not rely solely upon cylinder color for content identification.
7. Inspect the gas cylinder for scratches, dents, bulges, corrosion pits, scorch or burn marks, or any other physical indications that exceed the acceptable specifications for pressurized cylinders.
8. Keep the removable valve protection and valve outlet caps and plugs in place until connecting the cylinder for use.
9. Place the gas cylinder in an upright position and secure it to prevent an accidental upset or fall and to prevent it from striking another object.
10. Remove valve protector cap(s).
11. Examine the outlet of the valve for any dirt or other contamination before attaching a regulator.
12. Clear outlet of the valve of any dust and dirt by pointing the valve outlet away from personnel and slightly opening the valve (1/4 turn) and immediately closing it for an instantaneous burst of pressure.
13. Mount a thread-matched regulator onto the gas cylinder.
14. Open the regulator control fully.
15. Close the regulator control.
16. Open the cylinder valve slowly, using proper tools or by hand if fitted with a hand wheel, to prevent a sudden discharge of gas.
17. Ensure no hammering or use of improper wrenches is used to attempt to open or close a stuck valve. Tag the cylinder If necessary and take to an authorized facility to have the valve replaced.

Performance Steps

18. Open the cylinder valve fully and then close it to 1/2 turn from full open to free the valve for rapid operation if necessary.
19. Perform a pressure test using the regulator control.
20. Ensure at least 15 psig remain in the cylinder, or ensure the cylinder is empty and purged if less than 15 psig remained in the cylinder.
21. Close the cylinder valve tightly when finished with the pressure test.
22. Release all gas from the regulator.
23. Close the regulator control.
24. Remove the regulator from the gas cylinder.
25. Replace the valve protector cap(s).
26. Return and secure the gas cylinder to its storage area.
27. Read and follow the operating instructions in given reference(s).

Note: Performance steps 32 through 34 are to be used in conjunction with the Pressure Distribution System (PDS) included in the AN/GSM-705() Calibration.

28. Visually inspect the pressure standards and test instrument(s) (TI) for any physical defects.
29. Observe all safety precautions, warnings, hazards, and notes.

WARNING: The oxygen monitoring system alarm sounds when oxygen levels are dangerously low. Failure to observe this warning may result in death by asphyxiation.

WARNING: Ensure both nitrogen tank valves (TV 1 and TV 2) are closed before beginning any procedure. Failure to observe this warning may cause severe injury or death.

CAUTION: Equipment damage hazard. Quick connectors supplied with pressure distribution system are color-coded. Flex line connectors with a specific color band will only connect to pressure distribution system connectors of the same color. Attempting to mate connectors with different color bands may cause damage to tube fittings and quick connectors.

30. Turn on DPI 145/R pneumatic pressure standard (PPS) using front panel power switch.
31. Ensure that appropriate unit of measure is displayed (F1 Key).
32. Operate PDS and PPS to perform high pressure operation (300 - 2200 psi):
    a. Remove the protective cover from the high-pressure outlet port (orange band) and connect the flex line tubing with orange band by pushing the flex line in until a click is heard.
    b. Remove the white band protective covers from the flex line tubing and the pressure connector assembly.
    c. Connect the flex line tubing white band connector to the pressure connector (white band) assembly by pushing the flex line in until a click is heard.
    d. Connect the flex line tubing white band connector to the pressure connector (white band) assembly by pushing the flex line in until a click is heard.
    e. Remove the protective cover from the high pressure elbow port on panel below the DPI 145/R PPS.
    f. Connect the opposite end of pressure interface test assembly to the high pressure elbow port.

Performance Steps

Note: Use Gap Inspection Go/No Go Gage to ensure connectors are sufficiently tightened.

g. Mate TI to interface test adapter using appropriate adapter(s) and Teflon tape.
h. Remove protective cover from the pressure interface test assembly, and retain cover.
i. Mate TI and adapter (if necessary) to the pressure interface test assembly.
j. Ensure manifold valves V1, V2, and V3 are closed (clockwise).

WARNING: HIGH PRESSURE AIR HAZARD-Do not exceed 250 psi when no connections have been made to high pressure ports. Do not exceed 3000 psi at any time during high pressure operation.

Note: Ensure the pressure distribution system has been configured for high pressure operation before beginning this procedure.

k. Ensure V4 is in the closed (finger tight) position before opening nitrogen tanks.
l. Close the high-pressure and low-pressure regulators by turning the handles fully counterclockwise until no resistance is felt.
m. Open both nitrogen tank valves (TV 1 and TV 2) at least one full turn counterclockwise.
n. Open manifold valves V1 and V2 two full turns counterclockwise.
o. Open manifold valve V3 momentarily, then close V2 and V3.
p. Adjust the high-pressure regulator valve as required to obtain pressure required (up to 2200 psi or tank pressure).
q. Rotate the MPC1-3000 OUTLET SELECTION valve to the vent position, and then close the TEST OUTLET valve.

CAUTION: Never tighten the needle valves on the TEST INLET and OUTLET beyond light pressure. Over tightening will result in equipment damage.

CAUTION: Open the EQUALIZE valve (pull out) prior to opening the TEST INLET and OUTLET valves. Failure to observe this caution will result in equipment damage.

r. Rotate the Variable Volume piston (TEST ADJUST knob) to the appropriate position (normally mid-stroke).
s. Adjust (slowly) the TEST INLET valve as close to the desired indication on the TI as possible.
t. Close the TEST INLET valve.

CAUTION: Do not over range the TI.

u. Close the EQUALIZE valve (push in).
v. Rotate the Variable Volume (TEST ADJUST) knob until the desired pressure is obtained.

Note: EQUALIZE valve may open if Variable Volume is adjusted in excess of 150 psi, and a slight loss of pressure may result..

w. Close valves V1, V2, and V3 (fully clockwise).
x. Rotate both high and low pressure regulators to mid-range position.
y. Open valve V4 to bleed pressure from the system.
z. Ensure the OUTLET SELECTION valve is in VENT position, then open the EQUALIZE, TEST INLET, and TEST OUTLET valves in order to vent the MPC1-3000.
aa. Remove the TI from the pressure interface test assembly.
ab. Close both tank valves (TV 1 and TV 2) by turning fully clockwise.
ac. Open valves V1, V2, V3, and V4 to bleed the system.
ad. Remove all connections.

Performance Steps

33. Operate PDS and PPS to perform low pressure operation (0 - 299 psi):
    a. Remove the protective cover from the high-pressure outlet port (yellow band) and connect the flex line tubing with orange band by pushing the flex line in until a click is heard.
    b. Remove the white band protective covers from the flex line tubing and the pressure connector assembly.
    c. Connect the flex line tubing white band connector to the pressure connector (white band) assembly by pushing the flex line in until a click is heard.
    d. Connect the green band connector from the pressure interface test assembly to the green band connector (top connector) of the pressure connector assembly.
    e. Remove the protective cover from the low pressure elbow port on panel below DPI 145/R PPS.
    f. Connect the opposite end of pressure interface test assembly to the low pressure elbow port (300 psig connector).

Note: Use Gap Inspection Go/No Go Gage to ensure connectors are sufficiently tightened.

    g. Mate test instrument (TI) to interface test adapter using appropriate adapter(s) and Teflon tape.
    h. Remove protective cover from the pressure interface test assembly, and retain cover.
    i. Mate TI and adapter (if necessary) to the pressure interface test assembly.
    j. Ensure manifold valves V1, V2, and V3 are closed (clockwise).

CAUTION: Never tighten the needle valves on the TEST INLET and OUTLET beyond light pressure. Over tightening will result in equipment damage.

CAUTION: Open the EQUALIZE valve (pull out) prior to opening the TEST INLET and OUTLET valves. Failure to observe this caution will result in equipment damage.

    k. Rotate the Variable Volume piston (TEST ADJUST knob) to the appropriate position (normally mid-stroke).
    l. Adjust (slowly) the TEST INLET valve as close to the desired indication on the TI as possible.
    m. Close the TEST INLET valve.

CAUTION: Do not over range the TI.

    n. Close the EQUALIZE valve (push in).
    o. Rotate the Variable Volume (TEST ADJUST) knob until the desired pressure is obtained.
    p. Close both tank valves (TV 1 and TV 2) by turning fully clockwise.
    q. Open valves V4 and V6 to bleed the system.
    r. Open manifold valves V1, V2, and V3 two turns counterclockwise.
    s. Open the high and low pressure regulators by turning handles fully clockwise.
    t. Ensure the OUTLET SELECTION valve is in VENT position, then open the EQUALIZE, TEST INLET, and TEST OUTLET valves in order to vent the MPC1-3000.
    u. Remove the TI from the pressure interface test assembly.
    v. Remove all connections.

34. Replace all protective covers.

35. Operate Reference Pressure Monitor RPM-3 to perform hydraulic pressure operation.
    a. Turn on RPM-3 using front panel ON/OFF soft key.
    b. Ensure RPM-3 range setting is appropriate for TI test pressure (Key 7).
    c. Ensure RPM-3 displays appropriate unit of measure (Key 8).
    d. Connect hydraulic pressure comparator to RPM-3 rear panel transducer connection using quick disconnect pressure hoses.

Performance Steps

CAUTION: Ensure pressure hoses are rated to withstand test pressure.

e. Attach gauge serving as TI to hydraulic comparator using Teflon tape.
f. Use fluid separator if calibrating high pressure pneumatic gauge.
g. Apply hydraulic pressure using pump handle.
h. Observe pressure displayed on RPM-3 front panel and TI.

CAUTION: Apply pressure slowly as desired TI pressure approaches. Do not over range TI.

i. Release pressure in a controlled manner.
j. Remove all connections.

36. Clean all equipment.
37. Replace all protective covers.
38. Stow all equipment.
39. Visually inspect the pressure and vacuum gauges for any physical defects.
40. Identify the correct calibration procedure(s) to be used in accordance with TB 43-180.
41. Update calibration procedure(s) as necessary in accordance with USATA Calibration Procedure Master List.
42. Observe all safety precautions, warnings, hazards, and notes.
43. Calibrate hydraulic gauges in accordance with TB 9-6685-319-24, Section III.
    a. Perform preliminary instructions.
    b. Perform equipment setup.
    c. Perform 0 to 10,000 psi hydraulic gages (0 to 20 percent accuracy) performance check, and make adjustments if necessary.
    d. Perform 0 to 5000 psi panel mounted hydraulic gages (1.0 to 20 percent accuracy) performance check, and make adjustments if necessary.
    e. Perform 0 to 10,000 psi panel mounted hydraulic gages (0.1 to 1.0 percent accuracy) performance check, and make adjustments if necessary.
    f. Perform final procedure.
44. Calibrate pneumatic gauges in accordance with TB 9-6685-319-24, Section IV.
    a. Perform preliminary instructions.
    b. Perform equipment setup.
    c. Perform 0 to 235 psi pneumatic gages (0.1 to 1.0 percent accuracy) performance check, and make adjustments if necessary.
    d. Perform 235 to 1000 psi pneumatic gages (0.1 to 1.0 percent accuracy) performance check, and make adjustments if necessary.
    e. Perform 1000 to 5000 psi pneumatic gages (0.1 to 1.0 percent accuracy) performance check, and make adjustments if necessary.
    f. Perform Final procedure.
45. Calibrate vacuum gauges in accordance with TB 9-6685-327-35, Section III.
    a. Perform preliminary instructions.
    b. Perform equipment setup.
    c. Perform vacuum performance check.
    d. Perform final procedure.
46. Replace the protective covers on gauges if necessary.
47. Disconnect and properly maintain equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Read TB 385-4, Paragraph 6-2.c. and reviewed AR 700-68 at least annually before working with or handling pressurized gas cylinders.	____	____
2. Ensured no more than two cylinders of the same gas were at a workstation at any one time.	____	____
3. Ensured empty cylinders were removed from the workstation.	____	____
4. Checked the identity of the gas by reading the label or other markings on the cylinder before using.	____	____
5. Checked gas cylinder for the correct cylinder color, the correct band size and color, the correct DOT colored tag, and the correct title.	____	____
6. Did not rely solely upon cylinder color for content identification.	____	____
7. Inspected the gas cylinder for scratches, dents, bulges, corrosion pits, scorch or burn marks, or any other physical indications that exceed the acceptable specifications for pressurized cylinders.	____	____
8. Kept the removable valve protection and valve outlet caps and plugs in place until connecting the cylinder for use.	____	____
9. Placed the gas cylinder in an upright position and secured it to prevent an accidental upset or fall and to prevent it from striking another object.	____	____
10. Removed valve protector cap(s).	____	____
11. Examined the outlet of the valve for any dirt or other contamination before attaching a regulator.	____	____
12. Cleared outlet of the valve of any dust and dirt by pointing the valve outlet away from personnel and slightly opening the valve (1/4 turn) and immediately closing it for an instantaneous burst of pressure.	____	____
13. Mounted a thread-matched regulator onto the gas cylinder.	____	____
14. Opened the regulator control fully.	____	____
15. Closed the regulator control.	____	____
16. Opened the cylinder valve slowly, using proper tools or by hand if fitted with a hand wheel, to prevent a sudden discharge of gas.	____	____
17. Ensured no hammering or use of improper wrenches was used to attempt to open or close a stuck valve. If necessary the cylinder was tagged and taken to an authorized facility to have the valve replaced.	____	____
18. Opened the cylinder valve fully and then closed it to 1/2 turn from full open to free the valve for rapid operation if necessary.	____	____
19. Performed a pressure test using the regulator control.	____	____
20. Ensured at least 15 psig remained in the cylinder, or ensured the cylinder was emptied and purged if less than 15 psig remained in the cylinder.	____	____
21. Closed the cylinder valve tightly when finished with the pressure test.	____	____

Performance Measures	GO	NO-GO
22. Released all gas from the regulator.	____	____
23. Closed the regulator control.	____	____
24. Removed the regulator from the gas cylinder.	____	____
25. Replaced the valve protector cap(s).	____	____
26. Returned and secured the gas cylinder to its storage area.	____	____
27. Read and followed the operating instructions in given reference(s).	____	____
28. Visually inspected the pressure standards and test instrument(s) (TI) for any physical defects.	____	____
29. Observed all safety precautions, warnings, hazards, and notes.	____	____
30. Turned on DPI 145/R pneumatic pressure standard (PPS) using front panel power switch.	____	____
31. Ensured that appropriate unit of measure is displayed (F1 Key).	____	____
32. Operated PDS and PPS to perform high pressure operation (300 - 2200 psi).	____	____
33. Operated PDS and PPS to perform low pressure operation (0 - 299 psi).	____	____
34. Replaced all protective covers.	____	____
35. Operated Reference Pressure Monitor RPM-3 to perform hydraulic pressure operation.	____	____
36. Cleaned all equipment.	____	____
37. Replaced all protective covers.	____	____
38. Stowed all equipment.	____	____
39. Visually inspected the pressure and vacuum gauges for any physical defects.	____	____
40. Identified correct calibration procedure(s) to be used in accordance with TB 43-180.	____	____
41. Updated calibration procedure(s) as necessary in accordance with USATA Calibration Procedure Master List.	____	____
42. Observed all safety precautions, warnings, hazards, and notes.	____	____
43. Calibrated hydraulic gauges in accordance with TB 9-6685-319-24, Section III.	____	____
44. Calibrated pneumatic gauges in accordance with TB 9-6685-319-24, Section IV.	____	____
45. Calibrated vacuum gauges in accordance with TB 9-6685-327-35, Section III.	____	____
46. Replaced protective covers on gauges if necessary.	____	____
47. Disconnected and properly maintained equipment.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 750-8
DA LABEL 80	TM 9-6695-239-14
DHI RPM3	
DRUCK DPI-145	
TB 385-4	
TB 43-180	
TB 750-25	
TB 9-6685-327-35	
USATA MASTER LIST	
TB 9-6685-319-24	

Calibrate Fuel Quantity Test Set

093-94H-1530

Conditions: In an operational environment (OE), given a Fuel Quantity Test Set (PSD 60-lAF) requiring calibration, TB 9-6625-2285-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-6625-2285-24, TB 43-180, TB 750-25, Manufacturer's Manual, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate Fuel Quantity Test Set in accordance with TB 9-6625-2285-24 and TB 43-180. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Figure 3-56. PSD60-1AF Fuel Quantity Test Set

1. Identify correct calibration procedure to be used in accordance with TB 43-180.

Performance Steps

2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.

Note: Perform steps 3 through 9 in accordance with TB 9-6625-2285-24.

3. Observe all safety precautions, warnings, hazards, and notes.
4. Perform preliminary instructions.
5. Perform equipment setup.
6. Perform capacitance measuring section accuracy performance check and make adjustments if necessary.
7. Perform capacitance simulation accuracy performance check and make adjustments if necessary.
8. Perform Megohmeter accuracy performance check and make adjustments if necessary.
9. Perform final procedure.
10. De-energize and disconnect equipment.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed calibration procedure in accordance with TB 9-6625-2285-24.	____	____
5. De-energized and disconnect equipment.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

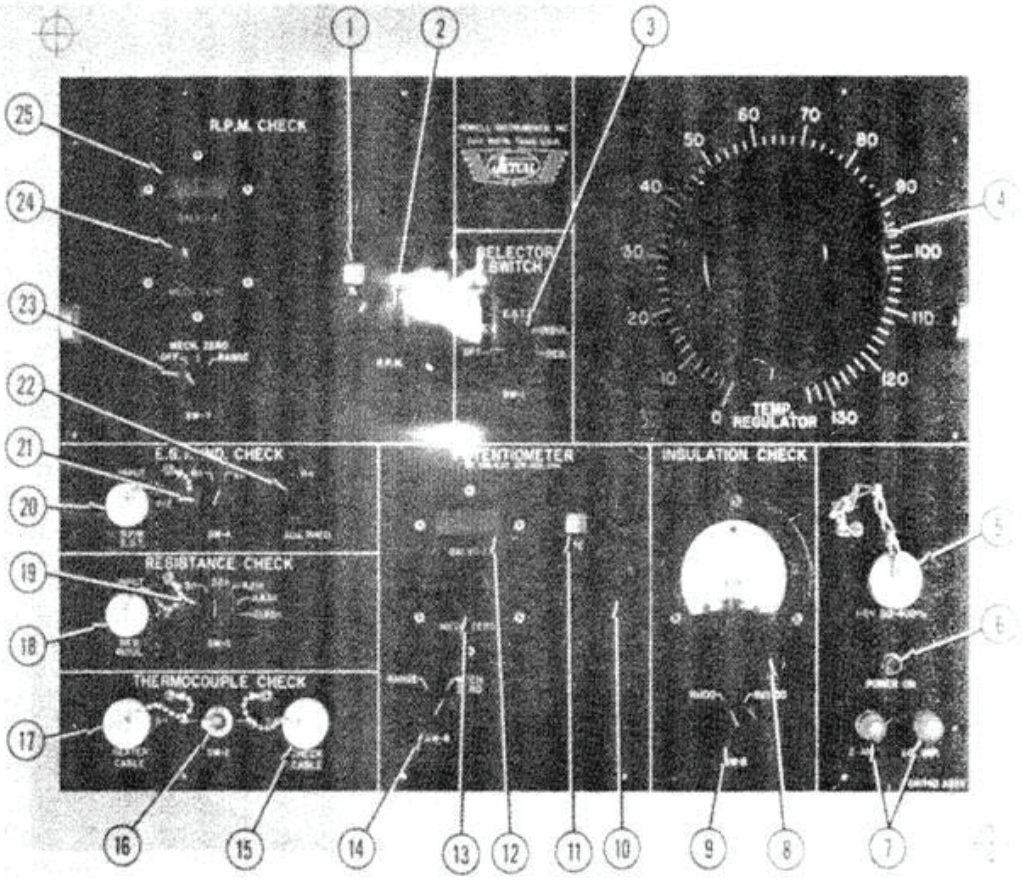
Required	**Related**
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 738-751
DA LABEL 80	DA PAM 750-8
TB 385-4	TM 9-6695-239-14
TB 43-180	
TB 750-25	
TB 9-6625-2285-24	
USATA MASTER LIST	
WAYNE KERR ELECTRONICS	

Calibrate Jet Cal

093-94H-1550

Conditions: In an operational environment (OE), given a Jet Cal (Tester Exhaust Gas Temperature BH112JB-( )) requiring calibration, TB 9-4920-454-24, Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-4920-454-24; TB 43-180, TB 750-25, TB 385-4, TM 55-4920-401-13&P, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate Jet Cal in accordance with TB 9-4920-454-24 and TB 43-180. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

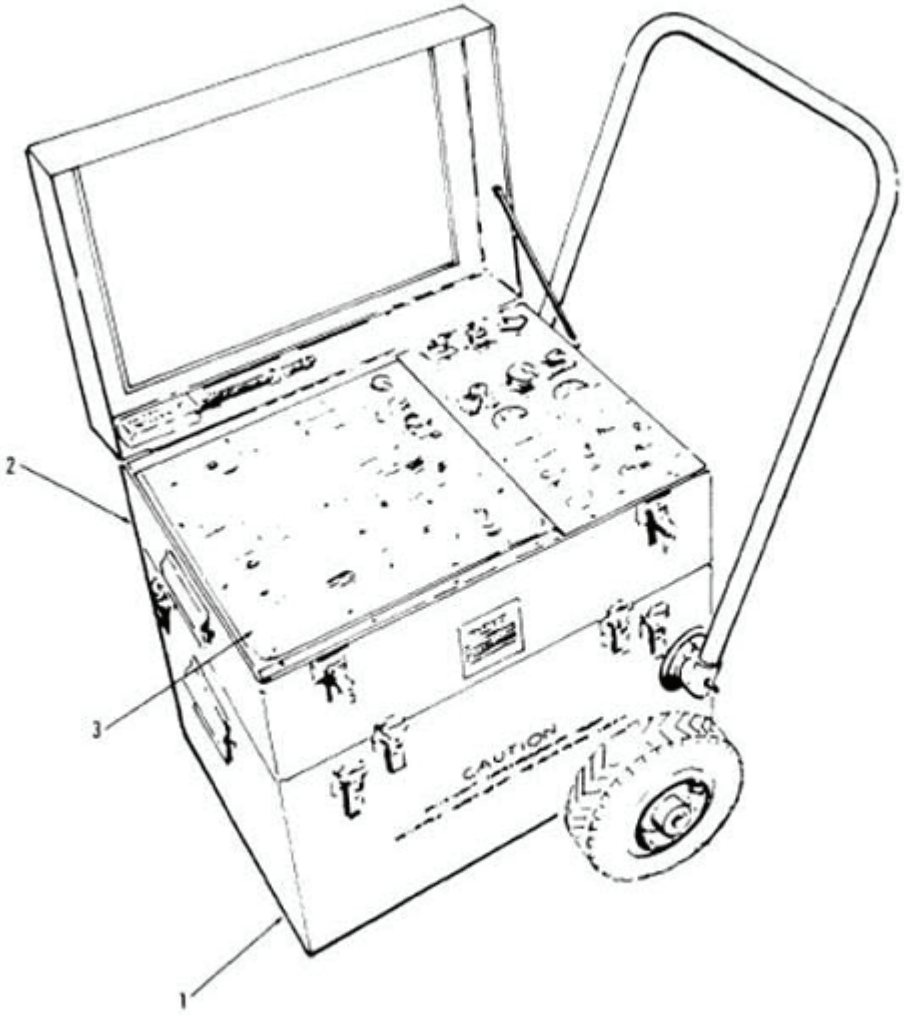


Key to figure 2–1.

1. Percent Scale
2. RPM Knob
3. Switch SW–1
4. Temperature Regulator Knob
5. Connector P–1
6. Power On Light
7. Fuses
8. Insulation Checkmeter
9. Switch SW–8
10. Temperature Selector Knob
11. Degree Scale
12. Galvanometer
13. Mechanical Zero Knob
14. Switch SW–6
15. Connector
16. Switch SW–2
17. Connector
18. Connector P–2
19. Switch SW–3
20. Connector P–3
21. Switch SW–4
22. Potentiometer R–1
23. Switch SW–7
24. Mechanical Zero Knob
25. Galvanometer

Figure 2–1. Operator's controls and instruments.

Figure 3-57. Operator's Control



BH112JB-53 and BH112JB-79 Exhaust Gas Temperature Tester

Figure 3-58. Exhaust Gas Temperature Tester

1. Identify correct calibration procedure to be used in accordance with TB 43-180.
2. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
3. Observe all safety precautions, warnings, hazards, and notes.

Note: Perform steps 4 through 14 in accordance with TB 9-4920-454-24.

4. Perform preliminary instructions.
5. Perform equipment setup.
6. Perform Temperature Indicator Performance check and make adjustments if necessary.

7. Perform Calibrator Board Performance check and make adjustments if necessary.
8. Perform % RPM Indicator Performance check and make adjustments if necessary.
9. Perform Standard Day Performance check and make adjustments if necessary.
10. Perform Heater Probe Control Performance check and make adjustments if necessary.

WARNING: Do not touch heater probes as severe burns could result.

11. Perform Insulation Resistance Performance check and make adjustments if necessary.
12. Perform Resistance Performance check and make adjustments if necessary.
13. Perform Aircraft Indicator Performance check.
14. Perform final procedure.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
2. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed preliminary instructions.	____	____
5. Performed equipment setup.	____	____
6. Performed Temperature Indicator Performance check and made adjustments if necessary.	____	____
7. Performed Calibrator Board Performance check and made adjustments if necessary.	____	____
8. Performed % RPM Indicator Performance check and made adjustments if necessary.	____	____
9. Performed Standard Day Performance check and made adjustments if necessary.	____	____
10. Performed Heater Probe Control Performance check and made adjustments if necessary.	____	____
11. Performed Insulation Resistance Performance check and made adjustments if necessary.	____	____
12. Performed Resistance Performance check and made adjustments if necessary.	____	____
13. Performed Aircraft Indicator Performance check.	____	____
14. Performed final procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure. Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 738-751
DA LABEL 80	DA PAM 750-8
TB 385-4	TM 9-6695-239-14
TB 43-180	
TB 750-25	
TB 9-4920-454-24	
TM 55-4920-401-13&P	
USATA MASTER LIST	

Repair Pitot Static Tester

093-94H-1569

Conditions: In an operational environment (OE), given a malfunctioning Pitot Static Tester (TS-4463()/P); pneumatic pressure standard, an electrician's tool kit, multimeter, TM 43-4920-910-12, TM 43-4920-910-40, DA Form 2404 (Equipment Inspection and Maintenance Worksheet), DA Form 7372 (TMDE Calibration and Repair Data), TB 385-4, and TB 750-25.

Standards: Repair Pitot Static Tester in accordance with TM 43-4920-910-12 and TM 43-4920-910-40. Observe all safety procedures in accordance with TB 385-4.

Performance Steps

Pitot Static Tester (TS-4463()/P)

Figure 3-59. Pitot Static Tester

Performance Steps

NOTE:

-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Read and follow the operator, maintenance, and repair instructions given in TM 43-4920-910-12 and TM 43-4920-910-40.
3. Visually inspect the pitot static tester for any physical defects.
4. Set up necessary support equipment to perform repair procedures on the pitot static tester.
5. Perform power-up procedures (including Leak rate and Stability Test) in accordance with TM 43-4920-910-12, Chapter 2-5.4.
6. Observe and record error messages displayed during power-up self-tests.

Note: Some errors display extra information using a four digit hexadecimal code. This should always be recorded with the error number to provide information for the repair depot.

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7. Take corrective action to restore pitot static tester to serviceable condition.
   a. Refer to TM 43-4920-910-40, Appendix C ERROR MESSAGES to determine if depot-level maintenance repair is necessary (based upon error codes).
   b. Refer to TM 43-4920-910-40, Appendix C WARNING MESSAGES to determine proper repair procedure.
   c. Follow procedures outlined in TM 43-4920-910-40, Chapter 3-9.1 MAIN FAULT FINDING CHART, based on symptoms, error messages, and flow chart.
   d. Refer to TM 43-4920-910-24P for information on repair parts and special tools (if necessary).
   e. Verify repair by performing Troubleshooting Flow Chart Tests in accordance with TM 43-4920-910-40, paragraph 3-10.2, Table 3-1 "Tests and Checks".
8. De-energize and disconnect all equipment.
9. Complete proper maintenance forms.

Evaluation Preparation: Ensure all required equipment or appropriate substitutions are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Read and followed the operator, maintenance, and repair instructions given in TM 43-4920-910-12 and TM 43-4920-910-40.	____	____
3. Visually inspected the pitot static tester for any physical defects.	____	____
4. Set up necessary support equipment to perform repair procedures on the pitot static tester.	____	____
5. Performed power-up procedures.	____	____

Performance Measures	GO	NO-GO
6. Observed and recorded error messages displayed during power-up self-tests.	____	____
7. Took corrective action to restore pitot static tester to serviceable condition.	____	____
8. De-energized and disconnected all equipment.	____	____
9. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	AR 750-1
DA FORM 7372	DA PAM 738-751
TB 385-4	DA PAM 750-8
TB 750-25	DRUCK DPI-145
TM 43-4920-910-12	TM 9-6695-239-14
TM 43-4920-910-24P	
TM 43-4920-910-40	

Calibrate Pitot Static Tester

093-94H-1570

Conditions: In an operational environment (OE), given model TS-4463()/P Pitot Static Tester requiring calibration, TB 9-4920-459-24; Forms, Records, Reports, Equipment, and Accessories required as listed in TB 9-4920-459-24; TB 43-180; TB 385-4, TB 750-25; and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) Calibration Procedure Master List.

Standards: Calibrate Pitot static tester in accordance with TB 43-180 and TB 9-4920-459-24. Observe all safety precautions in accordance with TB 385-4. Complete required DA Form 7372 (TMDE Calibration and Repair Data), DA Label 80 (US Army Calibrated Instrument), DA Label 163 (US Army Limited or Special Calibration), or DA Form 2417 (U.S. Army Calibration System Rejected Instrument) in accordance with TB 750-25.

Performance Steps

Pitot Static Tester (TS-4463()/P)

Figure 3-60. Pitot Static Tester

1. Visually inspect the pitot static tester for any physical defects.

Performance Steps

2. Identify correct calibration procedure to be used in accordance with TB 43-180.
3. Update calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.
4. Observe all safety precautions, warnings, and hazards.
5. Perform preliminary instructions.
6. Perform equipment setup.
7. Perform altitude performance check and make necessary adjustments.
8. Perform airspeed performance check and make necessary adjustments.
9. Perform final procedure.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Visually inspected the pitot static tester for any physical defects.	____	____
2. Identified correct calibration procedure to be used in accordance with TB 43-180.	____	____
3. Updated calibration procedure as necessary in accordance with USATA Calibration Procedure Master List.	____	____
4. Observed all safety precautions, warnings, and hazards.	____	____
5. Performed preliminary instructions.	____	____
6. Performed equipment setup.	____	____
7. Performed altitude performance check and made adjustments if necessary.	____	____
8. Performed airspeed performance check and made adjustments if necessary.	____	____
9. Performed final procedure.	____	____

Evaluation Guidance: Use the applicable technical bulletin as a guide to verify that all steps in the calibration process are performed in accordance with the proper calibration procedure.

Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 2417	AR 750-1
DA FORM 7372	AR 750-43
DA LABEL 163	DA PAM 738-751
DA LABEL 80	DA PAM 750-8
DRUCK DPI-145	TM 43-4920-910-40
TB 385-4	TM 9-6695-239-14
TB 43-180	
TB 750-25	
TB 9-4920-459-24	
TM 43-4920-910-12	
USATA MASTER LIST	

Subject Area 7: RADIAC

Operate RADIAC Calibrator Sets

093-94H-1600

Conditions: In an operational environment (OE), with a requirement to operate a RADIAC calibrator set, model AN/UDM-2 RADIAC calibrator, various RADIAC items to act as Units Under Test (UUT), Radiation Room or working area, safety glasses, whole body and wrist thermo luminescent dosimeters, "Active" RADIAC survey meter, proper certification of safety indoctrination and training; proper supervision, TB 11-6665-227-12, TM 11-6665-227-12, 10 CFR 19, 10 CFR 20, 10 CFR 21, NRC 8.13, NRC 8.29, NRC Form 3 (U.S. Nuclear Regulatory Commission), AR 385-10, local RADIAC SOP, TB 43-180, TB 385-4, calibration procedures for test instruments, and TB 750-25.

Standards: Operate RADIAC calibrator set in accordance with applicable technical reference(s). Observe all safety precautions in accordance with Federal Regulations, AR 385-10, TB 385-4.

Performance Steps

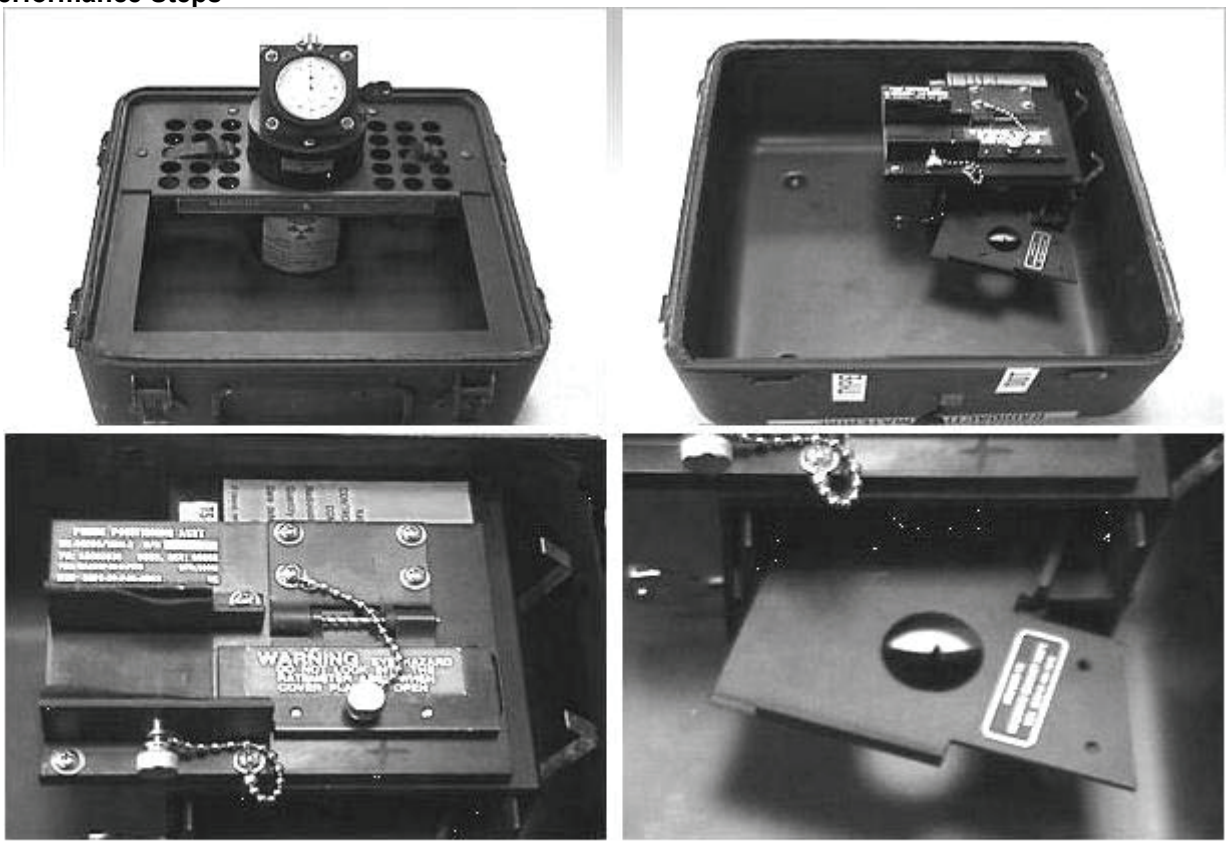


Figure 3-61. AN/UDM-2 RADIAC Calibrator

1. Read and follow the operating and safety instructions in TM 11-6665-227-12 and TB 11-6665-227-12.
2. Visually inspect the RADIAC calibrator set and RADIAC test instruments for any physical defects.

Performance Steps

a. Read and follow the operating and safety instructions in TM 11-6665-227-12 and TB 11-6665-227-12.
b. Visually inspect the RADIAC calibrator set and RADIAC test instruments for any physical defects.
c. Observe all safety precautions, warnings, hazards, and notes.
d. Perform survey of radiation room or work area.
e. Perform PMCS of RADIAC calibrator set in accordance with TM 11-6662-227-12.
f. Perform operation of RADIAC calibrator set in accordance with calibration procedure for RADIAC instruments.
g. Secure AN/UDM-2 RADIAC calibrator set.
h. Perform survey of radiation room or work area.

3. Observe all safety precautions, warnings, hazards, and notes.
4. Perform survey of radiation room or work area.
5. Perform PMCS of RADIAC calibrator set in accordance with TM 11-6662-227-12.
6. Perform operation of RADIAC calibrator set in accordance with calibration procedure for RADIAC instruments.
7. Secure AN/UDM-2 RADIAC calibrator set.
8. Perform survey of radiation room or work area.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Read and followed the operating and safety instructions in given reference(s).	____	____
2. Visually inspected the RADIAC calibrator set and RADIAC test instruments for any physical defects.	____	____
3. Observed all safety precautions, warnings, hazards, and notes.	____	____
4. Performed survey of radiation room or work area.	____	____
5. Performed PMCS of RADIAC calibrator set in accordance with TM 11-6662-227-12.	____	____
6. Performed operation of RADIAC calibrator set in accordance with calibration procedure for RADIAC acting as test instruments.	____	____
7. Secured RADIAC calibrator set.	____	____
8. Performed survey of radiation room or work area.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
10 CFR 19	DA PAM 750-8
10 CFR 20	TM 9-6695-239-14
10 CFR 21	
AR 385-10	
NRC FORM 3	
NRC REGULATORY GUIDE 8.13	

References

Required	Related
NRC REGULATORY GUIDE 8.29	
TB 11-6665-227-12	
TB 385-4	
TB 43-180	
TB 750-25	
TM 11-6665-227-12	

Subject Area 8: Calibration Set 2000 (CALSET 2000)

Perform Preventive Maintenance Checks and Services on a Generator Set

091-91D-1111

Conditions: In a contemporary operational environment, given a generator set, optical anti freeze tester, battery, goggles, apron, general mechanic's tool kit, rags, DA Form 5988-E (Equipment Inspection Maintenance Worksheet [EGA]), applicable technical publications and forms, hearing protection, and with supervision/assistance.

Standards: Perform preventive maintenance checks and services (PMCS) on a generator in accordance with the applicable technical publications and performance measures.

Performance Steps

1. Select and use applicable publications.
2. Select and used applicable tools to perform PMCS on a generator set.
3. Practice shop safety and maintenance discipline.
4. Perform before-operation PMCS on a generator set.
5. Operate the generator set.
6. Perform during-operation PMCS.
7. Shut down the generator set.
8. Perform after-operation PMCS.
9. Ensure required maintenance forms have been completed.
10. Maintain tools and equipment.

Evaluation Preparation: None

Performance Measures	**GO**	**NO-GO**
1. Selected and used applicable publications.	____	____
2. Selected and used applicable tools to perform PMCS on a generator set.	____	____
3. Practiced shop safety and maintenance discipline.	____	____
4. Performed before-operation PMCS on a generator set.	____	____
5. Operated the generator set.	____	____
6. Performed during-operation PMCS.	____	____
7. Shut down the generator set.	____	____
8. Performed after-operation PMCS.	____	____
9. Ensured required maintenance forms had been completed.	____	____
10. Maintained tools and equipment.	____	____

Evaluation Guidance: The Soldier scores a GO if all performance measures were passed. The Soldier scores a NO-GO if any performance measure was failed. If any performance measure was failed show the Soldier what was done wrong and how it should have been done to score a GO.

References

Required	Related
DA FORM 5988-E	
DA PAM 750-8	
FM 5-424	
TM 5-6115-271-14	
TM 5-6115-423-15	
TM 5-6115-440-10	
TM 5-6115-440-20	
TM 5-6115-465-12	
TM 5-6115-465-34	
TM 5-6115-545-12	
TM 5-6115-545-34	
TM 5-6115-584-12	
TM 5-6115-584-34	
TM 5-6115-585-12	
TM 5-6115-585-34	
TM 5-6115-586-12	
TM 5-6115-590-12	
TM 5-6115-590-34	
TM 5-6115-593-12	
TM 5-6115-596-14	
TM 5-6115-600-12	
TM 5-6115-600-34	
TM 5-6115-612-12	
TM 5-6115-612-34	
TM 5-6115-614-12	
TM 5-6115-615-12	
TM 5-6115-615-34	
TM 5-6115-629-14&P	
TM 9-2815-252-24	
TM 9-2815-254-24	
TM 9-2815-256-24	
TM 9-6115-464-12	
TM 9-6115-542-24&P	
TM 9-6115-545-24P	
TM 9-6115-624-BD	
TM 9-6115-641-10	
TM 9-6115-641-24	
TM 9-6115-642-10	
TM 9-6115-642-24	
TM 9-6115-643-10	
TM 9-6115-643-24	
TM 9-6115-644-10	
TM 9-6115-644-24	
TM 9-6115-645-10	
TM 9-6115-645-24	
TM 9-6115-663-13&P	

Operate Vehicle with Standard or Automatic/Semiautomatic Transmission

551-88M-1364

Conditions: Provided a tactical wheeled vehicle with a standard or automatic/semiautomatic transmission, with before-operation maintenance performed, basic issue items (BII), dispatch, -10 series technical manual (TM), accident forms, and guidance on route to operate.

Standards: You are to safely operate your vehicle by following all starting and operating procedures in the referenced TM. You are to have shift gears (manual transmission), use the proper gear mode or gear range for road conditions, and maintain control of the vehicle during all movement (forward and backward). All driving maneuvers are to be completed without injury to personnel or damage to vehicle.

Performance Steps

1. Prepare for vehicle operation.
   a. Adjust the seats (as needed).
   b. Adjust driving mirrors (as needed).
   c. Fasten seat belt.
   d. Ensure the parking brake is applied.
   e. On vehicles with winch, ensure that power takeoff is disengaged.
   f. Insert hearing protection prior to starting vehicle.
   g. Start vehicle engine (refer to applicable vehicle TM for proper starting procedures).
   h. Observe all instruments and warning lights and buzzers for proper operation.
   i. Allow engine to warm up and brake system air tank warning buzzer to go off (as applicable).
2. Set the vehicle in motion.
   a. Turn on lights as required.
   b. Refer to TM for proper procedures for placing your vehicle into motion.
   c. Check for approaching traffic.
   d. Signal to indicate your direction of movement (if tactically permitted).
   e. Release parking brake.
3. Shift the gears (as applicable). Bring vehicle to desired speed by shifting, as necessary, through the gear pattern (manual transmission) or selecting different gear ranges (automatic transmission).
4. Turn the vehicle.
   a. Prepare to turn (full turn).
      (1) Signal a right or left turn (when permitted).
      (2) Observe responses of other vehicle to your signals.
      (3) Reduce speed to make the turn safely. Keep in mind terrain and load (if applicable) when determining your speed through the turn.
   b. Start the turn. Rotate the top of the steering wheel in the direction of turn and adjust as desired.
5. Stop the vehicle (nonemergency).
   a. Remove foot from accelerator.
   b. Apply engine retarder if equipped and as needed.
   c. Apply service brakes as needed to bring vehicle to complete and safe stop.
6. Back the vehicle.
   a. With vehicle at a complete stop, set the parking brake.
   b. Place transmission in Neutral (N).
   c. Post ground guides if available.
   d. Check behind vehicle to ensure there are no obstructions or personnel.
   e. Sound horn (if tactically permitted).
   f. Place transmission in Reverse (R).

Performance Steps

g. Release parking brake.
h. If ground guide is posted, observe and adhere to signals to move vehicle into position.
i. If no ground guide is present, check all views through rear view mirrors and slowly steer the vehicle backward into position. If necessary, repeat steps 6 a through g above to complete the rearward movement.
j. Stop the vehicle.

7. Park the vehicle.
   a. Place the transmission selector lever in Neutral (N).
   b. Set the parking brake.
   c. Shutdown the engine (refer to TM).
   d. Drain air reservoir if vehicle is no longer needed.
   e. Emplace chocks blocks as needed.

Evaluation Preparation: Setup: Provide the Soldier with a vehicle and a route to follow.

Brief Soldier: Tell the Soldier to drive the vehicle safely using the proper shifting techniques (gear to gear - standard, gear range - automatic/semiautomatic). The Soldier is to operate vehicle from a standing start for level ground, uphill starting, and downhill starting, use proper braking techniques on level ground as well as up or down hill. If vehicle has a standard transmission, Soldier must use the engine compression (clutch out) to assist in slowing vehicle. There must NOT be any free clutching (coasting with the clutch engaged) to slow vehicle. If operating vehicle with automatic/semiautomatic transmissions, the proper gear range must be selected appropriate with the terrain conditions and load on the vehicle.

Performance Measures	**GO**	**NO-GO**
1. Prepared for vehicle operation.	____	____
2. Set the vehicle in motion.	____	____
3. Shifted the gears.	____	____
4. Turned the vehicle.	____	____
5. Stopped the vehicle (nonemergency).	____	____
6. Backed the vehicle.	____	____
7. Parked the vehicle.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If any performance measure is failed, tell the Soldier what was done wrong and how to do it correctly.

References

Required	**Related**
TC 21-305-20	
TM 9-2320-260-10	
TM 9-2320-280-10	
TM 9-2320-303-10	
TM 9-2320-364-10	
TM 9-2320-365-10	
TM 9-2320-366-10-1	
TM 9-2320-366-10-2	

Skill Level 3

Subject Area 9: Maintenance Operations

Prepare Secondary Transfer Set for Mobile Operations
093-94H-3000

Conditions: In an operational environment (OE), given a movement order, an Area TMDE Support Team including all personnel and organic equipment; unit standing operating procedure (SOP), and equipment technical references.

Standards: Prepare all equipment and personnel organic to the Area TMDE Support Team including secondary transfer calibration set, vehicles, and repair parts for mobile operations. Supervise preventive maintenance checks and services (PMCS), load plan preparation, and equipment load up in accordance with unit standing operating procedures and associated technical references. Observe all safety precautions in accordance with TB 385-4 and apply composite risk management.

Performance Steps

1. Read and follow the unit standing operating procedures and Operation Order for the mobile operations.
2. Brief personnel assigned to the mobile operations.
3. Assign operators to perform preventive maintenance checks and services (PMCS) on equipment.
4. Supervise PMCS of all equipment.
5. Assign areas of responsibility to team personnel.
6. Ensure traceability of all calibration standards is maintained.
7. Assemble equipment needed to perform the mobile operations.
8. Verify load plans.
9. Supervise equipment load up.
10. Perform pre-movement inspection for both personnel and equipment.
11. Incorporate Composite Risk Management measures into all operations.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Read and followed the unit standing operating procedures and Operation Order for the mobile operations.	____	____
2. Briefed personnel assigned to the mobile operations.	____	____
3. Assigned operators to perform preventive maintenance checks and services (PMCS) on equipment.	____	____
4. Supervised PMCS of all equipment.	____	____
5. Assigned areas of responsibility to team personnel.	____	____
6. Ensured traceability of all calibration standards is maintained.	____	____
7. Assembled equipment needed to perform the mobile operations.	____	____

Performance Measures	GO	NO-GO
8. Verified load plans.	____	____
9. Supervised equipment load up.	____	____
10. Performed pre-movement inspection for both personnel and equipment.	____	____
11. Incorporated Composite Risk Management measures into all operations.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
FM 5-19	DA PAM 385-1
TB 385-4	DA PAM 750-8
UNIT SOP	TB 43-180
	TB 750-25
	TM 9-6695-239-14

Repair Radio Test Set (Advanced)

093-94H-3010

Conditions: In an operational environment (OE), given a malfunctioning radio test set, electrician's tool kit, necessary support equipment (oscilloscope, multimeter, spectrum analyzer, and so on), manufacturer's or technical manual, equipment listed in the manual, TB 385-4, and TB 750-25.

Standards: Repair the radio test set in accordance with applicable technical manual(s). Observe all safety precautions in accordance with TB 385-4.

Performance Steps

Figure 3-62. AN/GRM-122 and AN/GRM-114B Radio Test Sets

NOTE:
-Determine if warranty repair is applicable.

-Determine if repair is authorized.

-Before beginning repair process, check work order and talk to unit maintenance, if possible, for description of symptoms and steps taken to correct them.

-Check all forms and tags attached to or accompanying equipment to determine reason for removal from service.

1. Observe all safety precautions, warnings, hazards, and notes.
2. Read and follow the preliminary instructions given in TM 11-6625-3244-40, and Aeroflex TS-4317 and J-1601A / RPM-001 maintenance manuals.
3. Visually inspect the radio test set for any physical defects.

Performance Steps

4. Set up the necessary support equipment to perform repair procedures on the radio test set.
5. Turn on Small Computer System Interface (SCSI).
   a. Press MTRS MODE key.
   b. Press "AUX" F6.
   c. Press 5 on DATA ENTRY keypad to select "5. External I/O".
   d. Press 3 on DATA ENTRY keypad to display the Configure SCSI sub-menu.
   e. Verify SCSI operation mode is ON. If OFF, press ENTER to toggle on.
   f. Press "ESC" F6 twice to return to Auxiliary Functions Menu.
6. Restore factory defaults.
   a. Press RCL key while in Auxiliary Functions Menu.
   b. Press FIELD SELECT directional keys to move highlight to "10. Factory Defaults", and press ENTER.
   c. Verify Yes/No selection is Yes, and press ENTER.
7. Perform Self Test.

   Note: All external input connections must be removed from Test Set prior to performing Self Test.

   a. Press MTRS key.
   b. Press "AUX" F6.
   c. Press 4 on DATA ENTRY keypad.
   d. Press 1 on DATA ENTRY keypad.
   e. Use FIELD SELECT direction keys to find failed test.
   f. Press "Extend" F1 when submenu highlight is over failed test.
      (1) Record displayed values of failed test (if any).
      (2) Perform tests on each submenu item (if any) by pressing list number on DATA ENTRY keypad, and record results.
   g. Use FIELD SELECT directional keys to move through remainder of Self Test Menu.
   h. Repeat step 7e for each item that failed and record results of each extended test.
8. Perform BIT1 Test.
   a. Press the DPLX Mode key.
   b. Press "Sp Tst" F5 key.
   c. Press "More" F6 key until "BIT1" and "BIT2" are displayed over the F2 and F3 keys, respectively.
   d. Press "BIT1" F2 key.
   e. Press GO.
   f. Follow the on-screen directions to press appropriate buttons, and make necessary cable connections.
9. Perform BIT2 Test.
   a. Press the DPLX Mode key.
   b. Press "Sp Tst" F5 key.
   c. Press "More" F6 key until "BIT1" and "BIT2" are displayed over the F2 and F3 keys, respectively.
   d. Press "BIT2" F3 key.
   e. Press GO.
   f. Follow the on-screen directions to press appropriate buttons and connect/disconnect test cables.
10. Perform troubleshooting procedures in accordance with TM 11-6625-3244-40, Chapter 2, Section III, and Aeroflex TS-4317 and J-1601A / RPM-001 maintenance manuals.

Performance Steps

a. Follow the General Troubleshooting Guidelines of paragraph 2-7.
b. Select symptom from Symptom Index.
c. Refer to Troubleshooting Table 2-1 for appropriate repair procedures.

11. Perform a functional block diagram and schematic analysis to localize the malfunction.
12. Perform Performance Test in accordance with procedures in TM 11-6625-3244-40, Chapter 2, Section IV.
13. Perform various checks and tests as outlined in applicable technical manuals and manufacturer's manuals to isolate the malfunction.
14. Take corrective action as prescribed in maintenance procedure.
15. Verify operation of radio test set.
16. De-energize and disconnect all equipment.
17. Complete proper maintenance forms.

Evaluation Preparation: Ensure all required equipment or appropriate substitutions are on hand and all safety requirements are met. Evaluator will induce a fault by disconnecting a circuit card or cable connector or other non-destructive method prior to the start of performance evaluation.

Performance Measures	**GO**	**NO-GO**
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Read and followed the preliminary instructions given in TM 11-6625-3244-40, and Aeroflex TS-4317 and J-1601A / RPM-001 maintenance manuals.	____	____
3. Visually inspected the radio test set for any physical defects.	____	____
4. Set up the necessary support equipment to perform repair procedures on the radio test set.	____	____
5. Turned on Small Computer System Interface (SCSI).	____	____
6. Restored factory defaults.	____	____
7. Performed Self Test.	____	____
8. Performed BIT1 Test.	____	____
9. Performed BIT2 Test.	____	____
10. Performed troubleshooting procedures in accordance with TM 11-6625-3244-40, Chapter 2, Section III, and Aeroflex TS-4317 and J-1601A / RPM-001 maintenance manuals.	____	____
11. Performed functional block diagram and schematic analysis to localize the malfunction.	____	____
12. Performed Performance Test in accordance with procedures in TM 11-6625-3244-40, Chapter 2, Section IV.	____	____
13. Performed various checks and tests as outlined in applicable technical manuals and manufacturer's maintenance manuals to isolate the malfunction.	____	____
14. Took corrective action as prescribed in maintenance procedure.	____	____
15. Verified operation of radio test set.	____	____

Performance Measures	GO	NO-GO
16. De-energized and disconnected all equipment.	____	____
17. Completed proper maintenance forms.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AEROFLEX J-1601A	AR 750-1
AEROFLEX TS-4317 MM	DA PAM 750-8
AEROFLEX TS-4317 OM	TM 9-6695-239-14
TB 385-4	
TB 750-25	
TM 11-6625-3244-12	
TM 11-6625-3245-40	

Perform Duties as RADIAC Custodian

093-94H-3020

Conditions: In an operational environment (OE), given RADIAC custodian duties, a TMDE maintenance facility containing radioactive commodities, local post and unit standing operating procedures, AR 25-400-2, AR 40-5, AR 385-10, and technical bulletins for handling, monitoring, wipe test, transporting, reporting, storage, and disposal of radioactive materials.

Standards: Perform RADIAC custodian duties in accordance with local post and unit standing operating procedures, AR 25-400-2, AR 40-5, AR 385-10, and technical bulletins for handling, monitoring, wipe test, transporting, reporting, storage, and disposal of radioactive materials.

Performance Steps

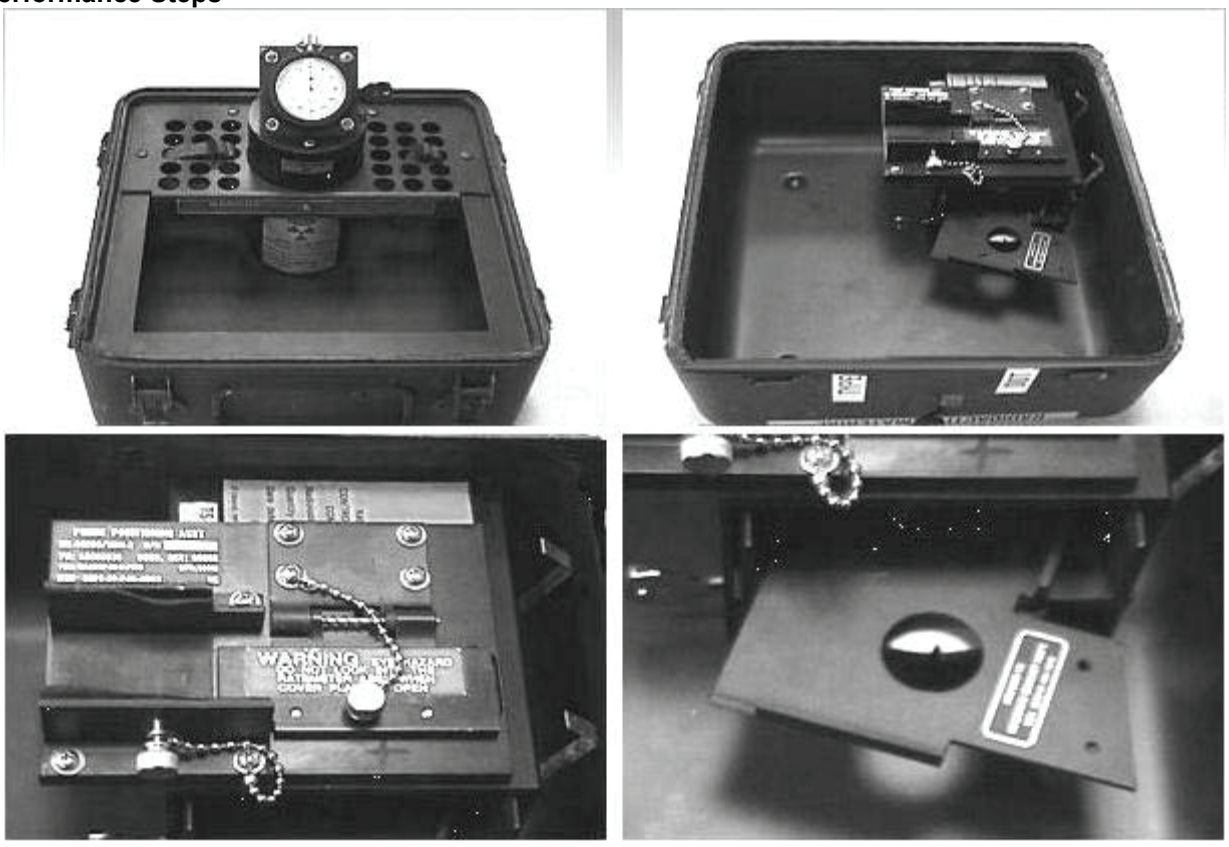


Figure 3-63. AN/UDM-2 RADIAC Calibrator

1. Develop an inspection schedule.
2. Locate copies of local standing operating procedures.
3. Locate copies of prior inspection reports.
4. Perform wipe test on RADIAC equipment properly.
5. Perform inspection of the RADIAC equipment, radioactive materials and areas according to the following inspection areas:
   a. Verify personnel handle radioactive materials and RADIAC equipment properly.

Performance Steps

b. Verify radioactive materials and RADIAC equipment are stored properly.
c. Verify RADIAC equipment and radioactive materials have proper paper work prior to transportation.
d. Verify personnel dispose of RADIAC equipment and radioactive materials properly.

6. Correct deficiencies or list remedial action to correct deficiencies noted on the report.
7. Prepare final report.
8. File copy of final report.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Developed an inspection schedule.	____	____
2. Located copies of local standing operating procedures.	____	____
3. Located copies of prior inspection reports.	____	____
4. Performed wipe test on RADIAC equipment properly.	____	____
5. Performed inspection of the RADIAC equipment, radioactive materials and areas.	____	____
6. Corrected or listed remedial action to correct deficiencies noted on the report.	____	____
7. Prepared final report.	____	____
8. Filed copy of final report.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AR 25-400-2	10 CFR 19
AR 385-10	10 CFR 20
AR 40-5	10 CFR 21
NRC FORM 3	AR 710-3
NRC REGULATORY GUIDE 8.13	DA PAM 750-8
NRC REGULATORY GUIDE 8.29	TM 11-6665-227-12
TB 11-6665-227-12	TM 9-6695-239-14
TB 385-4	
TM 3-6665-312-30&P	
TM 3-6665-331-23&P	
TM 3-6665-343-23&P	

Maintain Automated Network System

093-94H-3030

Conditions: In an operational environment (OE), given automated system within AN/GSM-705( ) Calibration Set requiring routine maintenance, cables and connectors, TM 9-6695-239-14 and/or Manufacturer's Manuals, and TB 385-4.

Standards: Maintain the automated system within the AN/GSM-705( ) Calibration Set in accordance with TM 9-6695-239-14 and Manufacturer's Manuals, and observe all safety precautions in accordance with TB 385-4.

Performance Steps

1. Observe all safety precautions, warnings, hazards, and notes.
2. Maintain the following equipment as an Automated system within AN/GSM-705( ) in accordance with TM 9-6695-239-14 and manufacturer's manuals:
   a. 10Base-T hub
   b. Fiber optic hub
   c. Flat panel display
   d. ICE workstations
   e. Keyboard and mouse receiver
   f. Media converters
   g. Network router
   h. Network server
   i. Power conditioners
   j. Printer
   k. RAID cabinet with storage drives
   l. Redundant power supply
   m. SEP (signal entry panel)
   n. Server
   o. UPS (uninterruptible power supply)
   p. Video and optic network cables

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Observed all safety precautions, warnings, hazards, and notes.	____	____
2. Maintained the equipment in performance step 2 above as an Automated system within AN/GSM-705( ) in accordance with TM 9-6695-239-14 and manufacturer's manuals.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
MANUAL FACTURER'S MANUAL	DA PAM 750-8
TB 385-4	
TM 9-6695-239-14	

Conduct Quality Assurance Inspection

093-94H-3050

Conditions: In an operational environment (OE), given an Area TMDE Support Team, local standing operating procedures, local safety records, all required reports, documentation, applicable technical publications, prior inspection reports, AR 190-51, AR 700-68, AR 750-43, DA Form 1687 (Notice of Delegation of Authority-Receipt for Supplies), DA Pamphlet 750-8, TB 385-4, TB 750-25, TB 43-180, and United States Army Test, Measurement, and Diagnostic Equipment (TMDE) Activity (USATA) SOP 702-1.

Standards: Conduct the Quality Assurance inspection of the Army TMDE Support Team in accordance with reference publications listed in the task condition.

Performance Steps

1. Develop an inspection schedule.
2. Conduct an inspection in briefing.
3. Select the equipment for end item verification inspection.
4. Conduct an inspection and assign a rating in all functional areas.
    a. Inspect Safety:
        (1) Inspect CPR training for assigned personnel.
        (2) Inspect Compressed gas cylinder safety.
        (3) Inspect Laser/Mercury SOP (if applicable).
        (4) Inspect Grounding/non-conductivity.
        (5) Inspect Safety warning signs.
        (6) Inspect Emergency shut-off circuit breaker(s).
        (7) Inspect Emergency lights.
    b. Inspect Management operations, to include administrative, procedural, publications, and technical operations.
        (1) Inspect Required reading for assigned personnel.
        (2) Inspect Calibrator DC Zero documentation.
        (3) Inspect Cross checks.
        (4) Inspect Visual inspections.
        (5) Inspect Test reports.
        (6) Inspect Administrative storage procedures.
        (7) Inspect Technical library.
        (8) Inspect Instrument Master Record File (IMRF) accuracy.
        (9) Inspect Calibration labels.
        (10) Conduct End-item verifications.
    c. Inspect Facilities.
        (1) Inspect Physical security program.
        (2) Inspect Key control.
        (3) Inspect Vehicle maintenance program.
        (4) Inspect Equipment PMCS.
        (5) Inspect Materiel Safety Data Sheets.
    d. Inspect Production Control.
        (1) Inspect Customer account files.
            (a) Inspect DA Form 1687.
            (b) Inspect Assumption of Command memoranda.
            (c) Inspect TMDE Support Coordinator appointment orders.
            (d) Inspect TMDE Support Coordinator training certificates.
        (2) Inspect Customer equipment accountability (inventories).
        (3) Inspect Management Report.

Performance Steps

(a) Inspect Readiness rate.
(b) Inspect Delinquency rate.
(c) Inspect Backlog.
(d) Inspect Turn around time.
(4) Inspect In- Shop Status List.
(5) Inspect TMDE Support Coordinator training.
e. Inspect Supply.
(1) Inspect Bench Stock.
(2) Inspect Document register.
f. Inspect RADIAC Operations.
(1) Inspect Local Radiation Safety Officer files.
(2) Inspect Training files.
(3) Inspect Dosimetry files.
(4) Inspect Survey files.

5. Compile the inspection report.
6. Conduct an inspection out-briefing.
7. Submit the formal inspection report.
8. Review the inspection report reply for corrective action, if applicable.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Developed an inspection schedule.	____	____
2. Conducted an inspection in briefing.	____	____
3. Selected the equipment for end item verification inspection.	____	____
4. Conducted an inspection and assigned a rating in the functional areas.	____	____
5. Compiled the inspection report.	____	____
6. Conducted an inspection out-briefing.	____	____
7. Submitted the formal inspection report.	____	____
8. Reviewed the inspection report reply for corrective action, if applicable.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	**Related**
AR 190-51	10 CFR 19
AR 385-10	10 CFR 20
AR 700-68	10 CFR 21
AR 750-1	DA PAM 738-751
AR 750-43	TM 9-6695-239-14
DA FORM 1687	
DA PAM 750-8	
NRC FORM 3	
NRC REGULATORY GUIDE 8.13	
NRC REGULATORY GUIDE 8.29	

References

Required	Related
TB 11-6665-227-12	
TB 385-4	
TB 43-180	
TB 750-25	
TM 11-6665-227-12	
USATA SOP 702-1	

Submit a Quality Deficiency Report (QDR)

093-SSG-3004

Conditions: In an operational environment (OE), given the requirement to submit a QDR for a serious or recurring maintenance problem and given Army regulation (AR) 95-1, AR 725-50, Department of the Army (DA) Form 2404 (Equipment Inspection and Maintenance Worksheet), Department of Defense (DD) Form 1575 (Suspended Tag - Materiel), DD Form 2332 (Product Quality Deficiency Report Exhibit), DA Pamphlet 750-8, DA Pamphlet 738-751, Standard Form (SF) 368 (Product Quality Deficiency Report), and Technical Bulletin (TB) 43-0001-62-01-3. This task can be performed in a field or garrison environment.

Standards: Identify conditions that indicate a quality deficiency exists, prepare the appropriate report form, and identify and retain QDR exhibits that had been disposed of.

Performance Steps

Note: Follow steps 1 through 9 for all equipment except aviation equipment. For aviation equipment, follow steps 10 through 17.

1. Identify one or more conditions that indicate a quality deficiency existed.
   a. A condition in or with the equipment dangerous to people, other equipment, or the mission.
   b. An item or equipment that does not work right or lasts as long as it should have because of bad design or materials.
   c. Items that are not within the approved equipment specifications.
   d. Low-quality workmanship.
   e. Dangerous situations due to incorrect or missing data.
   f. Maintenance problems.
   g. Conditions that prevents use of the equipment.
   h. Repeat problems that take a lot of time with no solutions in sight.
   i. Problems requested to be reported by the national maintenance point (NMP).
   j. Corrosion problems in or on parts, components, assemblies, weapon systems, and/or equipment.
2. Identify defect as a Category I or Category II deficiency.
   a. Identify as a Category 1 deficiency any defect that--
      (1) May have caused death, injury, or severe job illness.
      (2) Would have caused loss or major damage to a weapon system.
      (3) Would have critically restricted the combat readiness capabilities of the unit.
   b. Identify any defect as Category II deficiency that does not meet the criteria for a Category I deficiency.
3. Prepare appropriate QDR for Category I or Category II.
   a. Prepare Category I report in message format copy of SF 368 in accordance with DA Pamphlet 750-8.
   b. Prepare Category II report on SF 368 in accordance with DA Pamphlet 750-8.
4. Forward SF 368 to the major subordinate command (MSC) within 48 hours (Category I deficiencies) or 5 working days (Category II deficiencies) after the defect or problem was found.

Note: Category I reports may be phoned in or brought in for immediate assistance, with message following within the 48-hour time frame.

Note: MSC acknowledges receipt and begins screening stocks within 24 hours of the report.

5. Files one copy of the SF 368 until the Army screening point closes the case.

Performance Steps

6. Sends one copy of the SF 368 to the support maintenance activity.

   Note: Sent SF 368 even if--

   a. Correspondence indicates the problem is known to exist.
   b. Other units send in a QDR on the same problem.

7. Identify defective equipment as exhibits.

8. Retain QDR exhibits in accordance with DA Pamphlet 750-8.

9. Follow disposition instructions received from the MSC action office responsible for the exhibits.

   Note: Follow steps 10 through 17 for preparation of QDRs on aviation equipment.

10. Identify any of the following conditions that indicate an aviation quality deficiency exists in accordance with DA Pamphlet 738-751, Chapter 3.
    a. A condition involving personnel safety or safety of flight (SOF) as defined in AR 95-1.
    b. Suspected or confirmed materiel failure that causes a Class A, B, C, D, or E aircraft mishap.
    c. Materiel failure or fault that would cause a hazard to personnel or equipment or hinder safe completion of the mission.
    d. Equipment did not work properly because of bad design and/or materiel or low-quality workmanship during manufacture, modification, conversion, repair, overhaul, or rebuild.
    e. Environmental conditions that cause the failure of aircraft or aviation associated equipment, to include mission related equipment, components and modules, repair parts, systems, and/or subsystems.
    f. During initial test or use, found a defective stock funding of depot level repairables (SFDLR) item, and such defect was not caused by user accident, misuse, improper installation, and/or operation, unauthorized repair, or alteration.

11. Identify deficiencies as Category I or Category II.
    a. Identify any of the following as a Category I deficiency.
       (1) An unsafe condition, operation, or maintenance procedure for aircraft, mission related equipment, component and module, or repair part whose use was critical to airworthiness.
       (2) Any failure that could be expected to cause loss of the aircraft and/or serious injuries to the aircrew or ground personnel.
       (3) The reason for failure, identified or suspected, did not provide enough warning for the aircrew to complete a safe landing, and it was reasonable to assume that the problem could be present in other aircraft of the mission, design, and series (MDS).
       (4) Incorrect or missing data in technical publications that may have caused a hazardous operational or maintenance problem.
    b. Identify as a Category II deficiency any defect that did not meet the criteria for a Category I deficiency.

12. Prepare SF 368 for Category I or Category II deficiency in accordance with DA Pamphlet 738-751, Chapter 3.

13. Submit a Category I or Category II report in accordance with DA Pamphlet 738-751.

14. Distribute file copies of the SF 368 in accordance with DA Pamphlet 738-751.

    Note: Sent SF 368 even if --

    a. Manufacturer representatives have shown that they are aware of the problem.
    b. Another unit within your command has already sent a deficiency report on the same problem.

15. Identify defective equipment as exhibits.

Performance Steps

16. Receive acknowledgment of receipt of Category I report within 48 hours or Category II report within 7 days from Aviation and Missile Command (AMCOM). The acknowledgement included the disposition instructions for exhibits.
17. Follow disposition instructions received from the AMCOM action office for the exhibits.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
Note: Follow steps 1 through 9 for all equipment except aviation equipment. For aviation equipment, follow steps 10 through 17.		
1. Identified one or more conditions that indicated a quality deficiency existed.	____	____
2. Identified defect as a Category I or Category II deficiency.	____	____
3. Prepared appropriate QDR for Category I or Category II.	____	____
4. Forwarded SF 368 to the major subordinate command (MSC) within 48 hours (Category I deficiencies) or 5 working days (Category II deficiencies) after the defect or problem was found.	____	____
5. Kept one copy of the SF 368 until the Army screening point closed the case.	____	____
6. Sent one copy of the SF 368 to the support maintenance activity.	____	____
7. Identified defective equipment as exhibits.	____	____
8. Retained QDR exhibits in accordance with DA Pamphlet 750-8.	____	____
9. Followed disposition instructions received from the MSC action office responsible for the exhibits.	____	____
Note: Follow steps 10 through 17 for preparation of QDRs on aviation equipment.		
10. Identified any of the following conditions that indicated an aviation quality deficiency existed in accordance with DA Pamphlet 738-751, Chapter 3.	____	____
11. Identified deficiencies as Category I or Category II.	____	____
12. Prepared SF 368 for Category I or Category II deficiency in accordance with DA Pamphlet 738-751, Chapter 3.	____	____
13. Submitted a Category I or Category II report in accordance with DA Pamphlet 738-751.	____	____
14. Distributed file copies of the SF 368 in accordance with DA Pamphlet 738-751.	____	____
15. Identified defective equipment as exhibits.	____	____
16. Received acknowledgment of receipt of Category I report within 48 hours or Category II report within 7 days from Aviation and Missile Command (AMCOM). The acknowledgement included the disposition instructions for exhibits.	____	____
17. Followed disposition instructions received from the AMCOM action office for the exhibits.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 725-50	AR 702-7
AR 95-1	AR 702-7-1
DA FORM 2404	
DA PAM 738-751	
DA PAM 750-8	
DD FORM 1575	
DD FORM 2332	
SF 368	
TB 43-0001-62-08-3	

Submit Equipment Improvement Recommendation (EIR)

093-SSG-3005

Conditions: You have found a better way to repair a piece of electronic equipment. In an operational environment (OE), submit an EIR given the following: Army regulation (AR) 672-20, Department of the Army (DA) Pamphlet 750-8, and Standard Form (SF) 368 (Product Quality Deficiency Report). This task can be performed in a field or garrison environment.

Standards: Prepare the appropriate report forms for a recommended equipment improvement and check AR 672-20 to see if the EIR qualified as a suggestion.

Performance Steps

1. Identify conditions that indicate a need to improve the performance and/or maintenance of equipment.
   a. A condition in or with the equipment that was dangerous to people, other equipment, or the mission.
   b. An item or piece of equipment that did not work right or last as long as it should because of bad design or materials.
   c. Items that were not within the approved equipment specifications.
   d. Low quality workmanship.
   e. Dangerous situations due to incorrect or missing data.
   f. Maintenance problems.
   g. Conditions that prevented using the equipment.
   h. Repeated problems that took a lot of time with no solutions in sight.
   i. Problems requested to be reported by the national maintenance point (NMP).
2. Report Category I or Category II recommendations for improvements.
   a. Reports Category I recommendations for any of the following improvements.
      (1) Improvements that prevent death, injury, or severe job illness.
      (2) Improvements that prevent loss or major damage to equipment.
      (3) Improvements that will affect the combat readiness capabilities of the unit.
   b. Reports as a Category II recommendation any recommendation that does not meet the criteria of a Category I equipment improvement recommendation.
3. Send in a Category I or Category II equipment improvement recommendation.
   a. Prepares SF 368 in accordance with DA Pamphlet 750-8, Chapter 10.
   b. Sends a message within 48 hours (Category I recommendation) or 5 days (Category II recommendation) after defect or problem was found.
   c. Keeps one copy of the SF 368 until the Army screening point closed the case.
   d. Sends one copy of the SF 368 to the support maintenance activity.
4. Check AR 672-20 to see if the EIR qualified as a suggestion.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Identified conditions that indicated a need to improve the performance and/or maintenance of equipment.	____	____
2. Reported Category I or Category II recommendations for improvements.	____	____
3. Sent in a Category I or Category II equipment improvement recommendation.	____	____
4. Checked AR 672-20 to see if the EIR qualified as a suggestion.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	**Related**
AR 672-20	DA PAM 738-751
DA PAM 750-8	
SF 368	

Plan Work Flow
093-SSG-3006

Conditions: In an operational environment (OE), given DA Form 5990-Es (Maintenance Request [EGA])/job packets with various issue priority designators, a visible index file showing the shop workload summary. This task can be performed in a field or garrison environment.

Standards: Distribute all DA Form 5990-Es/job packets by issue priority designators, highest priorities first. Ensure the visible index file was up to date, legible, and complete.

Performance Steps

1. Arrange the DA Form 5990-Es/job packets by issue priority designators, highest priorities first.
2. Use the DA Form 5990-Es/job packets in the same order to assign jobs to repairers.
3. Monitor work as the jobs went through the repair process.
4. Assign new jobs to the repairers as they completed those assigned.
5. Review all paperwork within the job packets for completeness.
6. Update the visible index file.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Arranged the DA Form 5990-Es/job packets by issue priority designators, highest priorities first.	____	____
2. Used the DA Form 5990-Es/job packets in the same order to assign jobs to repairers.	____	____
3. Monitored work as the jobs went through the repair process.	____	____
4. Assigned new jobs to the repairers as they completed those assigned.	____	____
5. Reviewed all paperwork within the job packets for completeness.	____	____
6. Updated the visible index file.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 5990-E	DA PAM 738-751
	DA PAM 750-8
	FM 4-30.3

Direct Performance of Preventive Maintenance

093-SSG-3007

Conditions: In an operational environment (OE), given personnel to perform preventive maintenance checks and services (PMCS), Department of the Army (DA) Form 2408-14 (Uncorrected Fault Record), DA Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet [EGA]), Department of Defense (DD) Form 314 (Preventive Maintenance Schedule and Record), DA Pamphlet 750-8, DA Pamphlet 738-751, equipment, and vehicle -10 series technical manuals (TMs). This task can be performed in a field or garrison under normal, extreme heat, and extreme cold environment conditions.

Note: All the information from DA Form 2408-14 is now included in DA Form 5988-E.

Standards: Perform all PMCS according to the applicable -10 series TMs. Complete DA Form 2404 or DA Form 5988-E and DA Form 2408-14 and DD Form 314 according to DA Pamphlet 750-8 or DA Pamphlet 738-751.

Performance Steps

1. Coordinate with the motor pool section prior to performing section/shop vehicle PMCS.
2. Review the DD Form 314 and the applicable -10 series TMs to conduct weekly vehicle PMCS.
    a. Identify which PMCS service operation must be performed.
    b. Identify each piece of equipment for which operation under conditions inspection must be performed.
        (1) Operation under usual conditions.
        (2) Operation under unusual conditions.
            (a) Operation in extreme cold weather.
            (b) Operation in extreme heat weather.
            (c) Operation in dusty or sandy areas.
            (d) Operation under rainy or humid conditions.
3. Identify hazards to the environment before starting PMCS.
4. Assign jobs and ensure that repairers know what PMCS must be performed.
5. Spot-check the work being performed and ensure that the repairers are using the applicable TMs.
6. Assess the probability of environmental damage/violations using environmental risk assessment matrices during PMCS.
7. Spot-check corrective actions taken for all defects listed on DA Form 2404.
8. Coordinate with the maintenance sergeant to repair vehicles requiring services beyond the driver's responsibility.
    a. Ensure the repairer placed a drip pan under any equipment leaking fluids onto the ground.
    b. Make sure parts needed for repair that are not available are entered on DA Form 5988-E or DA Form 2408-14.
9. Check the DD Form 314 for correctness.
10. Report vehicle status to section/shop supervisor.
11. Brief the chain of command on any observed environmental potentially high-risk areas during PMCS.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Coordinated with the motor pool section prior to performing section/shop vehicle PMCS.	____	____
2. Reviewed the DD Form 314 and the applicable -10 series TMs to conduct weekly vehicle PMCS.	____	____
3. Identified hazards to the environment before starting PMCS.	____	____
4. Assigned jobs and ensured that repairers knew what PMCS must be performed.	____	____
5. Spot-checked the work being performed and ensured that the repairers were using the applicable TMs.	____	____
6. Assessed the probability of environmental damage/violations using environmental risk assessment matrices during PMCS.	____	____
7. Spot-checked corrective actions taken for all defects listed on DA Form 2404.	____	____
8. Coordinated with the maintenance sergeant to repair vehicles requiring services beyond the driver's responsibility.	____	____
9. Checked the DD Form 314 for correctness.	____	____
10. Reported vehicle status to section/shop supervisor.	____	____
11. Briefed the chain of command on any observed environmental potentially high-risk areas during PMCS.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	AR 200-1
DA FORM 2408-14	FM 4-30.3
DA FORM 5988-E	TC 3-34.489
DA PAM 738-751	
DA PAM 750-8	
DD FORM 314	

Provide Technical Assistance to Repairers

093-SSG-3008

Conditions: A repairer in the electronics/avionics maintenance shop requires technical assistance. In an operational environment (OE), given Department of the Army (DA) Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet [EGA]), DA Form 5990-E (Maintenance Request [EGA]), DA Pamphlet 750-8, DA Pamphlet 738-751, and Technical Bulletin (TB) 385-4, provide needed assistance to the repairer. This task can be performed in a field or garrison environment.

Standards: Provide technical assistance that will enable the repairer to perform repair procedures correctly.

Performance Steps

1. Determine the type of assistance needed by the repairer, such as isolating the malfunction, repairing the malfunction, or making proper entries on the paperwork.
2. Review DA Form 2404 or DA Form 5988-E and DA Form 5990-E to determine reason for maintenance or repair.
3. Verify repairer observes WARNING, CAUTION, and NOTE statements in applicable references and observed all safety precautions.
4. Review the repair procedures performed by the repairer.
5. Provide technical assistance to the repairer.
6. Counsel repairer on areas of technical weakness.
7. Recommend technical material and training to increase repairer's expertise.

Evaluation Preparation: Setup: A repairer in the electronics/avionics maintenance shop requires technical assistance working on a job order.

Brief Soldier: Tell the Soldiers they are going to be evaluated on how well they provide technical assistance to a subordinate while working on a work order. They will be evaluated on well they determine what type of assistance the Soldier requires to isolating the malfunction, repair job order piece of equipment or complete paperwork, while still being compliance with the current Army safety regulations, shop safety policies and unit SOP.

Performance Measures	**GO**	**NO-GO**
1. Determined the type of assistance needed by the repairer, such as isolating the malfunction, repairing the malfunction, or making proper entries on the paperwork.	____	____
2. Reviewed DA Form 2404 or DA Form 5988-E and DA Form 5990-E to determine reason for maintenance or repair.	____	____
3. Verified repairer observed WARNING, CAUTION, and NOTE statements in applicable references and observed all safety precautions.	____	____
4. Reviewed the repair procedures performed by the repairer.	____	____
5. Provided technical assistance to the repairer.	____	____
6. Counseled repairer on areas of technical weakness.	____	____
7. Recommended technical material and training to increase repairer's expertise.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	
DA FORM 5988-E	
DA FORM 5990-E	
DA PAM 738-751	
DA PAM 750-8	
TB 385-4	

Perform Initial Inspections

093-SSG-3009

Conditions: In an operational environment (OE), given applicable technical manuals (TMs), the equipment to be inspected, Department of the Army (DA) Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet [EGA]), DA Form 5990-E (Maintenance Request [EGA]), DA Pamphlet 750-8, and DA Pamphlet 738-751. This task can be performed in a field or garrison environment.

Standards: Perform the initial inspection, ensuring that the equipment was repairable according to the applicable TMs; identify all defects, and complete all maintenance forms according to DA Pamphlet 750-8 or DA Pamphlet 738-751.

Performance Steps

1. Check submitted paperwork for completeness and accuracy.
2. Inspect the equipment for physical damage and determined if it is feasible to repair the equipment.
3. Ensure that operator maintenance have been performed on the equipment.
4. Inventory the equipment to ensure that it is complete.
5. Ensure that all modification work orders (MWOs) are complete.
6. Perform self-tests or checks on the equipment, if necessary.
7. Record all defects or reasons for rejection the equipment on DA Form 2404 or DA Form 5988-E.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Checked submitted paperwork for completeness and accuracy.	____	____
2. Inspected the equipment for physical damage and determined if it was feasible to repair the equipment.	____	____
3. Ensured that operator maintenance had been performed on the equipment.	____	____
4. Inventoried the equipment to ensure that it was complete.	____	____
5. Ensured that all modification work orders (MWOs) had been completed.	____	____
6. Performed self-tests or checks on the equipment, if necessary.	____	____
7. Recorded all defects or reasons for rejecting the equipment on DA Form 2404 or DA Form 5988-E.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	DA PAM 750-1
DA FORM 5988-E	FM 4-30.3
DA FORM 5990-E	TM 750-245-4
DA PAM 738-751	
DA PAM 750-8	

Perform Final Inspections

093-SSG-3010

Conditions: In an operational environment (OE), given applicable technical manuals (TMs), equipment to be inspected, Department of the Army (DA) Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet [EGA]), DA Form 5990-E (Maintenance Request [EGA]), DA Pamphlet 750-8, and DA Pamphlet 738-751. This task can be performed in a field or garrison environment.

Standards: Perform final inspection. Ensure that equipment was complete according to applicable TMs, all defects identified in previous inspections had been corrected, any additional defects had been recorded on DA Form 2404 or DA Form 5988-E, and all forms had been completed according to DA Pamphlet 750-8 or DA Pamphlet 738-751.

Performance Steps

1. Check the equipment to determine if it is complete and that all defects found on the initial and in-process inspections are complete.
2. Ensure that all forms and records are complete and correct.
3. Record any additional defects on DA Form 2404 or DA Form 5988-E and return the equipment to production control.
4. Sign and date the DA Form 5990-E when the equipment passes its final inspection.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Checked the equipment to determine if it was complete and that all defects found on the initial and in-process inspections had been corrected.	____	____
2. Ensured that all forms and records were complete and correct.	____	____
3. Recorded any additional defects on DA Form 2404 or DA Form 5988-E and returned the equipment to production control.	____	____
4. Signed and dated the DA Form 5990-E when the equipment passed its final inspection.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	DA PAM 750-1
DA FORM 5988-E	FM 4-30.3
DA FORM 5990-E	TM 750-245-4
DA PAM 738-751	
DA PAM 750-8	

Perform In-Process Inspections

093-SSG-3012

Conditions: In an operational environment (OE), given applicable inspection forms and technical manuals (TMs), DA Pamphlet 750-8, and DA Pamphlet 738-751, conducts in-process inspection of a repairer performing repairs on equipment. This task can be performed in a field or garrison environment.

Standards: Perform in-process inspection. Ensure that the proper tools and equipment were being used and all safety rules and warnings were being followed according to applicable TMs. Complete all forms according to DA Pamphlet 750-8 or DA Pamphlet 738-751 and report inspection results.

Performance Steps

1. Use the proper tools and equipment during in-process inspection.
2. Use the proper technical manual repair procedures during in-process inspection.
3. Ensure that authorized repair parts and supplies are available.
4. Ensure that only authorize repairs are performed on the equipment.
5. Ensure that only authorize personnel make the repairs.
6. Ensure that all safety rules and warnings are used.
7. Ensure that all forms are filled out correctly.
8. Make an oral or written report of the inspection to the repair section chief and the quality control section supervisor.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Ensured that the proper tools and equipment were used.	____	____
2. Ensured that the proper repair procedures were followed.	____	____
3. Ensured that only authorized repair parts and supplies were used.	____	____
4. Ensured that only authorized repairs were performed on the equipment.	____	____
5. Ensured that only authorized personnel made the repairs.	____	____
6. Ensured that all safety rules and warnings were followed.	____	____
7. Ensured that all forms were filled out correctly.	____	____
8. Made an oral or written report of the inspection to the repair section chief and the quality control section supervisor.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA PAM 738-751	FM 4-30.3
DA PAM 750-8	TM 750-245-4

Subject Area 10: Maintenance Management

Manage Cross Checks
093-94H-3040

Conditions: In an operational environment (OE), given selected TMDE standards from the Area TMDE Support Team requiring cross checks, 94H personnel to perform cross checks, TB 9-4931-537-24, TB 385-4, TB 43-180, and TIMMS User's Guide.

Standards: Supervise the performance of cross check procedures in accordance with TB 9-4931-537-24, and enforce safety precautions in accordance with TB 385-4. Take corrective action in accordance with TB 9-4931-537-24 if calibration standard fails cross check. Supervise the completion and maintenance of cross check records in accordance with TB 9-7931-537-24.

Performance Steps

1. Ensure that the correct standards are identified for cross checks.
   a. Fluke 5720A Calibrator.
   b. Fluke 5725A Amplifier.
   c. HP 3458A Multimeter.
2. Ensure that cross checks are performed as follows:
   a. Prior to placing the standards into service.
   b. Prior to submitting the standards for recertification.
   c. When there is doubt about the accuracy of a standard.
   d. When arriving at a site to perform calibration support and again before departing the site.
3. Ensure the cross checks are performed in accordance with TB 9-4931-537-24.
4. Ensure that cross check data tables and forms are complete and all information is accurate.
5. Ensure that proper procedures are followed when a standard is inoperable or fails to cross check.
6. Ensure that cross check records are maintained and copies distributed as required.
   a. Maintain cross check records for 2 years.
   b. Furnish copies to U.S. Army TMDE Activity Region Quality Assurance Office or appropriate activity.
7. Ensure that the cross checks are recorded in TIMMS/ICAPS.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Ensured that the correct standards were identified for cross checks.	____	____
2. Ensured that cross checks were being performed as follows.	____	____
3. Ensured the cross checks were performed in accordance with TB 9-4931-537-24.	____	____
4. Ensured that cross check data tables and forms were complete and all information was accurate.	____	____
5. Ensured that proper procedures were followed when a standard was inoperable or failed to cross check.	____	____
6. Ensured that cross check records were maintained and copies distributed as required.	____	____

Performance Measures	GO	NO-GO
7. Ensured that the cross checks were recorded in TIMMS/ICAPS.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
TB 385-4	AR 750-43
TB 43-180	TM 9-6695-239-14
TB 9-4931-537-24	
TIMMS USERS GUIDE	

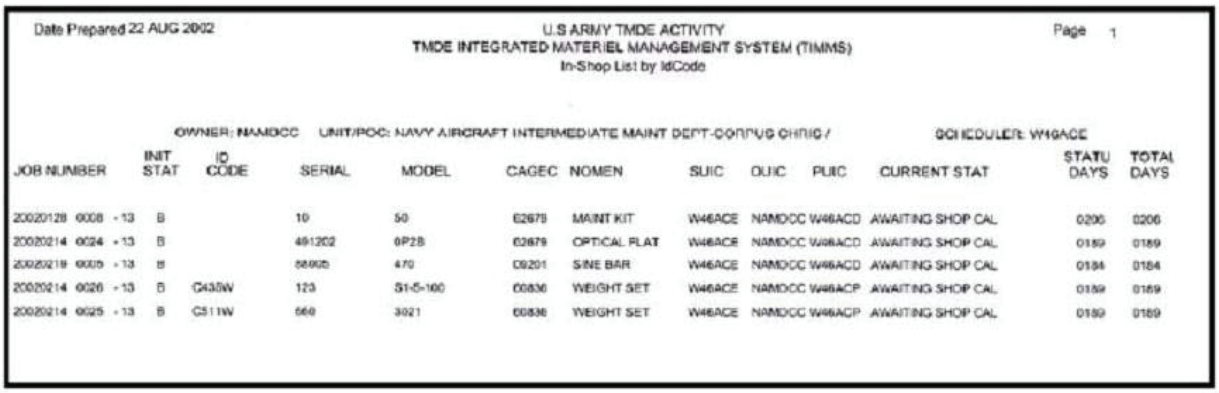
Manage Shop Operations Using Automated Procedures
093-94H-3060

Conditions: In an operational environment (OE), given customer equipment requiring calibration and repair support with open job orders and priority designators, TMDE facility standing operating procedures, a computer loaded with TMDE Integrated Materiel Management System (TIMMS), TIMMS User's Guide, AR 750-43, and automated shop reports.

Standards: Manage shop operations by using the current shop automated reports. Direct job flow and priority of work in accordance with open job order priority designators starting with the highest priorities. Ensure oldest jobs are completed first (First In/First Out). Meet TMDE readiness goals of AR 750-43.

Performance Steps

1. Review the current shop automated reports.



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TMDE INTEGRATED MATERIEL MANAGEMENT SYSTEM (TIMMS)
In-Shop List by IdCode

OWNER: NAMDCC UNIT/POC: NAVY AIRCRAFT INTERMEDIATE MAINT DEPT-CONTUS CHRIS / SCHEDULER: W16ACE

JOB NUMBER	INIT STAT	ID CODE	SERIAL	MODEL	CAGEC	NOMEN	SUIC	OUIC	PUIC	CURRENT STAT	STATU DAYS	TOTAL DAYS
20020128 0008 -13	B		10	50	62679	MAINT KIT	W46ACE	NAMDCC	W46ACD	AWAITING SHOP CAL	0206	0206
20020214 0024 -13	B		491202	6P2B	62679	OPTICAL FLAT	W46ACE	NAMDCC	W46ACD	AWAITING SHOP CAL	0189	0189
20020219 0005 -13	B		56905	470	09201	SINE BAR	W46ACE	NAMDCC	W46ACD	AWAITING SHOP CAL	0184	0184
20020214 0026 -13	B	C435W	123	S1-5-100	00830	WEIGHT SET	W46ACE	NAMDCC	W46ACP	AWAITING SHOP CAL	0189	0189
20020214 0025 -13	B	C511W	560	3021	00830	WEIGHT SET	W46ACE	NAMDCC	W46ACP	AWAITING SHOP CAL	0189	0189

Example "In-Shop" Report by OUIC

Figure 3-64. TIMMS In-Shop Report by OUIC

2. Establish priority of job orders according to their priority designators.
3. Direct work flow according to job date (First In First Out).
   a. Address jobs awaiting calibration over five days.
   b. Address jobs awaiting repair over 15 days.
   c. Address jobs awaiting parts over 20 days.
   d. Address jobs awaiting customer pickup over 10 days.
4. Monitor the work as the jobs go through the calibration and/or repair process.
5. Review all paper work within the job packets for completeness.
6. Update the job status.
7. Verify automated reports reflect current job status.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Reviewed the current shop automated reports.	____	____
2. Established priority of job orders according to their priority designators.	____	____
3. Directed work flow according to job date (First In First Out).	____	____

Performance Measures	GO	NO-GO
4. Monitored the work as the jobs went through the calibration and/or repair process.	____	____
5. Reviewed all paper work within the job packets for completeness.	____	____
6. Updated the job status.	____	____
7. Verified automated reports reflect current job status.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed. Score the Soldier NO-GO if any performance measure is failed. If the Soldier fails any performance measure, explain what was done wrong and how to do it correctly.

References

Required	Related
AR 750-1	DA PAM 750-8
AR 750-43	TB 385-4
DA PAM 750-3	TB 43-180
TB 750-25	TM 9-6695-239-14
TIMMS USERS GUIDE	

Inspect Section/Shop Safety

093-SSG-3001

Conditions: In an operational environment (OE), given a requirement to inspect an electronics or avionics maintenance shop area and given Army regulation (AR) 40-5, AR 385-10, Department of the Army (DA) Pamphlet 40-501, DA Pamphlet 385-1, TB 385-4, TB Medical (MED) 523, unit and local standing operating procedures (SOPs), and unit safety checklist. This task can be performed in a field or garrison environment.

Standards: Conduct inspection to ensure that all Army, company, and maintenance shop safety policies, regulations, and local SOPs were followed; all safety hazards were identified; environmental risk assessment to determine high risks areas was performed; and all deficiencies were corrected. Establish an inspection schedule covering what to inspect and how frequently. Record deficiencies and recommended corrective actions and retained these reports to check progress. Follow up to ensure deficiencies had been corrected.

Performance Steps

1. Review the Army, company, and maintenance shop safety policies, regulations, and local SOPs.
2. Ensure that all of the Army safety references and company and maintenance shop SOPs are being followed.
3. Plan periodic safety inspections for all section/shop work areas.
   a. Identify hazards to the environment prior to the inspection process.
   b. Assess the probability of environmental damage/violations using environmental risk assessment matrices before the inspection process.
4. Schedule the inspection so that disruptions to normal operations are as little as possible.
5. Inspect areas with the greatest potential for accident severity and those having the highest accident frequency more frequently.
6. Develop a suitable checklist of items to be inspected in accordance with AR 385-10, AR 40-5, DA Pamphlet 40-501, DA Pamphlet 385-1, TB 385-4, TB MED 523, and maintenance section/shop SOPs.
7. Inspect the maintenance section/shop to ensure that all test equipment calibration dates are current.
8. Inspect all of the equipment and benches for proper grounding within the maintenance section/shop areas.
9. Inspect the maintenance section/shop to ensure that a mounted safety board is present.
10. Inspect the maintenance section/shop to ensure that rubber floor mats or similar insulating materials are available for each repair position.
11. Inspect the maintenance section/shop to ensure that all power attachments, plugs, and connectors are serviceable with no exposed parts carrying electric current except the prongs.
12. Inspect and identify all of the physical and high-voltage hazards within the maintenance section/shop areas.
13. Inspect the maintenance section/shop to ensure it complies with host nation, local, state, and federal environmental laws and regulations.
14. Brief the chain of command on the results, potential high-risk areas, and recommendations from the safety inspection.
15. Identify all safety hazards and took corrective action.

Performance Steps

16. Ensure all deficiencies found during inspection have proper corrective action scheduled.

Evaluation Preparation: Setup: Select one of the maintenance section/shop within the company to perform a safety inspection.

Brief Soldier: Tell the Soldiers they are going to be evaluated on how well they are in compliances with the current Army safety regulations, shop safety policies and unit SOP. Request a copy of the last safety inspection and a copy of the current unit maintenance section/shop safety checklist, unit SOP and review the checklist prior to walk through. Look for areas with the greatest potential for accident severity and areas having the highest accident frequency, mounted safety board, rubber floor mats or similar insulating materials as requires and etc.

Performance Measures	**GO**	**NO-GO**
1. Reviewed the Army, company, and maintenance shop safety policies, regulations, and local SOPs.	____	____
2. Ensured that all of the Army safety references and company and maintenance shop SOPs were being followed.	____	____
3. Planned periodic safety inspections for all section/shop work areas.	____	____
4. Scheduled the inspection so that normal operations were disrupted as little as possible.	____	____
5. Inspected areas with the greatest potential for accident severity and those having the highest accident frequency more frequently.	____	____
6. Developed a suitable checklist of items to be inspected in accordance with AR 385-10, AR 40-5, DA Pamphlet 40-501, DA Pamphlet 385-1, TB 385-4, TB MED 523, and maintenance section/shop SOPs.	____	____
7. Inspected the maintenance section/shop to ensure that all test equipment calibration dates were current.	____	____
8. Inspected all of the equipment and benches for proper grounding within the maintenance section/shop areas.	____	____
9. Inspected the maintenance section/shop to ensure that a mounted safety board was present.	____	____
10. Inspected the maintenance section/shop to ensure that rubber floor mats or similar insulating materials were provided for each repair position.	____	____
11. Inspected the maintenance section/shop to ensure that all power attachments, plugs, and connectors were serviceable with no exposed parts carrying electric current except the prongs.	____	____
12. Inspected and identified all of the physical and high-voltage hazards within the maintenance section/shop areas.	____	____
13. Inspected the maintenance section/shop to ensure it was complying with host nation, local, state, and federal environmental laws and regulations.	____	____
14. Briefed the chain of command on the results, potential high-risk areas, and recommendations from the safety inspection.	____	____
15. Identified all safety hazards and took corrective action.	____	____
16. Ensured that any deficiencies found were corrected.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 385-10	AR 200-1
AR 40-5	FM 4-30.3
DA PAM 385-1	TB 43-0129
DA PAM 40-501	TC 3-34.489
TB 385-4	
TB MED 523	

Manage Section/Shop Security
093-SSG-3002

Conditions: In an operational environment (OE), given AR 25-2, AR 190-13, AR 380-5, AR 380-40, DA Pamphlet 190-51, and local and unit standing operating procedures (SOPs). This task can be performed in a field or garrison environment.

Standards: Ensure that all Army security policies and regulations and the maintenance shop and local SOPs were followed. Identify and report all security deficiencies and ensured that all deficiencies were corrected.

Performance Steps

1. Review all of the Army security policies and regulations and the maintenance shop and local SOPs.
2. Ensure a work place risk analysis is performed.
3. Ensure that physical security policies, regulations, and SOPs are followed.
4. Ensure that classification and marking policies are followed.
5. Ensure that all security control policies and regulations are followed.
6. Ensure that personnel security and signal training policies are followed.
   a. Initial security training and briefing for newly assigned personnel.
   b. Refresher security training for assigned personnel.
   c. Procedures for identifying and reporting insecurities.
7. Ensure that signal security (SIGSEC) policies and regulations are followed.
   a. Ensure subordinates follow all Army and unit policies and regulations covering communications security (COMSEC) procedures.
   b. Ensure subordinates follow all Army and unit policies and regulations covering electronics security (ELSEC) procedures.
8. Identify and report all security deficiencies and ensure that all deficiencies are corrected.

Evaluation Preparation: Setup: Select one of the maintenance section/shop within the company and inspect their security management.

Brief Soldier: Tell the Soldiers they are going to be evaluated on how well they are in compliances with the current Army security regulations, shop security policies and unit SOP. Request a copy of the last security inspection and a copy of the current unit maintenance section/shop security checklist, unit SOP and review the checklist prior to walk through. Look over the unit last six months gain roster for newly assigned personnel to see if they received their Initial security training and to see if refresher security training for assigned personnel is being conducted.

Performance Measures	**GO**	**NO-GO**
1. Reviewed all of the Army security policies and regulations and the maintenance shop and local SOPs.	____	____
2. Ensured a work place risk analysis was performed.	____	____
3. Ensured that physical security policies, regulations, and SOPs were followed.	____	____
4. Ensured that classification and marking policies were followed.	____	____
5. Ensured that all security control policies and regulations were followed.	____	____
6. Ensured that personnel security and signal training policies were followed.	____	____

Performance Measures	GO	NO-GO
7. Ensured that signal security (SIGSEC) policies and regulations were followed.	____	____
8. Identified and reported all security deficiencies and ensured that all deficiencies were corrected.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 190-13	AR 5-12
AR 25-2	DA PAM 25-380-2
AR 380-40	FM 4-30.3
AR 380-5	
DA PAM 190-51	

Maintain Section/Shop Calibration Program

093-SSG-3003

Conditions: In an operational environment (OE), given the maintenance section/shop calibration program, to include test, measurement, and diagnostic equipment (TMDE) master listing for the program; DA Form 3758-R (Calibration and Repair Requirements Worksheet); DA Label 80 (US Army Calibrated Instrument); TB 43-180; TB 750-25; and company standing operating procedures (SOPs). This task can be performed in a field or garrison environment.

Standards: Maintain a master listing for all calibrated equipment assigned to the maintenance section/shop in accordance with TB 43-180, TB 750-25, and company SOPs. Review the section/shop calibration listing for equipment due calibration on a monthly basis and update status of all calibration equipment still turned in to the calibration support unit.

Performance Steps

1. Identify all equipment listed on section/shop hand receipts that might require a calibration label.
   a. Test equipment.
   b. Equipment modules.
   c. Dummy loads.
   d. Voltage test probes.
   e. Radiation detection, indication, and computation (RADIAC) equipment.
   f. Motor pool equipment.
   g. Power supplies.
2. Determine which equipment identified was listed in TB 43-180.
   a. Equipment that requires calibration.
   b. Calibration not required (CNR) equipment.
3. Prepare DA Form 3758-R if any new equipment not listed in TB 43-180 required calibration.
4. Maintain a master listing for all calibrated items in the maintenance section/shop.
5. Schedule equipment for calibration
   a. Stagger like equipment, when possible, so that equipment is always available on site.
   b. Assign a higher priority for critical TMDE, when necessary.
   c. Schedule plug-in modules and accessories for calibration with the major piece of equipment.
   d. Review signature cards and orders, as required locally, to update customer files and for the first appointment.
6. Prepare CNR labels for remaining equipment, as required.
7. Turn in/pick up equipment from the calibration facility.
   a. Turn in equipment with a minimum of accessories and covers.
   b. Obtain signed and dated receipt for equipment.
   c. Inspect equipment for damage and accessories before signing.
   d. Obtain calibration listings when available.
8. Update calibration listing.
   a. Verify calibration due dates.
   b. Delete entries.
   c. Add entries.
   d. correct serial number, calibration date, and due date errors.
9. Maintain a temporary storage area for calibrate before use (CBU) equipment.
   a. Identify CBU equipment as appropriate.
   b. Identify a limited access storage area.
   c. Prepare DA Label 80 for CBU.

Performance Steps

d. Update calibration listing for CBU items.
e. Store equipment until required.
f. Submit equipment for calibration prior to use.

Evaluation Preparation: Setup: Select one of the maintenance shop/section within the company hand receipt that contents test, measurement, and diagnostic equipment (TMDE).

Brief Soldier: Tell the Soldiers they are going to be evaluated on how they review the company's master listing of all calibration items and selected maintenance section/shop hand receipt for calibration equipment listed. They must verify entries, equipment for correct serial numbers, calibration due dates and update company calibration list with new and turned-in equipment on the selected shop/section hand receipt due calibration.

Performance Measures	**GO**	**NO-GO**
1. Identified all equipment listed on section/shop hand receipts that might require a calibration label.	____	____
2. Determined which equipment identified was listed in TB 43-180.	____	____
3. Prepared DA Form 3758-R if any new equipment not listed in TB 43-180 required calibration.	____	____
4. Maintained a master listing for all calibrated items in the maintenance section/shop.	____	____
5. Scheduled equipment for calibration.	____	____
6. Prepared CNR labels for remaining equipment, as required.	____	____
7. Turned in/picked up equipment from the calibration facility.	____	____
8. Updated calibration listing.	____	____
9. Maintained a temporary storage area for calibrate before use (CBU) equipment.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	**Related**
DA FORM 3758-R	DA PAM 750-3
DA LABEL 80	
TB 43-180	
TB 750-25	

Write a Standing Operating Procedure (SOP)

093-SSG-3011

Conditions: In an operational environment (OE), given the unit's old SOP, Army regulation (AR) 750-1, Department of the Army (DA) Pamphlet 600-67, DA Pamphlet 750-3, Field Manual (FM) 4-30.3, FM 5-0, and Training Circular (TC) 43-4. This task can be performed in a field or garrison environment.

Standards: Write a new SOP that is reviewed and approved by the supervisor/commander. Implement all recommended changes.

Performance Steps

1. Develop a basic SOP format to ensure it meets organization/element specific needs and/or requirements for the maintenance facility.
   a. Purpose statement.
   b. Scope statement.
   c. Organization statement.
   d. Conformity statement.
   e. References.
   f. Annexes.
2. Include guidance in the SOP on the following as they pertain only to the maintenance facility.
   a. Personnel administration.
   b. Security.
   c. Security and intelligence.
   d. Area security.
   e. Physical security of weapons and property.
   f. Safety program.
   g. Maintenance operations.
   h. Management of hand receipts.
   i. Standard warnings.
   j. Alert procedures.
   k. Chemical, biological, radiological, nuclear (CBRN) warfare.
   l. Defense against nuclear attack.
   m. Logistics.
   n. Motor pool operations.
   o. Motor movement and traffic control.
   p. Tactical operations.
3. Ensure that all references used are current.
4. Staff the draft through the supervisor/commander.
5. Implement any approved SOP changes.
6. Obtain supervisor/commander signature on final version of SOP.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Developed a basic SOP format to ensure it met organization/element specific needs and/or requirements for the maintenance facility.	____	____
2. Included guidance in the SOP on the following as they pertained only to the maintenance facility.	____	____
3. Ensured that all references used were current.	____	____

Performance Measures	GO	NO-GO
4. Staffed the draft through the supervisor/commander.	____	____
5. Implemented any approved SOP changes.	____	____
6. Obtained supervisor/commander signature on final version of SOP.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 750-1	
DA PAM 600-67	
DA PAM 750-3	
FM 4-30.3	
FM 5-0	
TC 43-4	

Maintain Property Accountability
093-SSG-3013

Conditions: In an operational environment (OE), perform this task given a quarterly review of all hand receipts with hand receipt holders in the maintenance section/shop, issued new equipment, and tagged unserviceable equipment for turn-in, Army regulation (AR) 25-400-2, AR 710-2, Department of the Army (DA) Form 2062 (Hand Receipt/Annex Number), DA Pamphlet 710-2-1, hand receipts, applicable equipment, and applicable technical manuals (TMs). This task can be performed in a field or garrison environment.

Standards: Issue supplies and equipment to hand receipt holders while maintaining property and supply accountability.

Performance Steps

1. Notify hand receipt holders of quarterly inventory.
2. Review file copies of all hand receipts and signature cards for each maintenance section/shop.
3. Assembly all new equipment to be issued out into separate groups for issuing to hand receipt holders during the quarterly inventory.
4. Issue new equipment to hand receipt holders before inventorying.
5. Inventory hand receipts.
6. Update each hand receipt holder's equipment shortage list, as required.
7. Ensure that only authorized personnel on the hand receipt holder signature card signs the hand receipt.
8. Ensure that all forms were filled out correctly.
9. File hand receipts in appropriate hand receipt holder files.

Evaluation Preparation: Setup: One of your electronics/avionics maintenance shops is due its quarterly hand receipt inventory.

Brief Soldier: Tell the Soldier they are going to be evaluated on how well they been maintaining their shop hand receipt, to see if they have current signature cards, issued-out new equipment to sub-hand receipt holders, and equipment shortage list is current.

Performance Measures	**GO**	**NO-GO**
1. Notified hand receipt holders of quarterly inventory.	____	____
2. Reviewed file copies of all hand receipts and signature cards for each maintenance section/shop.	____	____
3. Assembled all new equipment to be issued into separate groups for issuing to hand receipt holders during the quarterly inventory.	____	____
4. Issued new equipment to hand receipt holders before inventorying.	____	____
5. Inventoried hand receipts.	____	____
6. Updated each hand receipt holder's equipment shortage list, as needed.	____	____
7. Ensured that only authorized personnel on the hand receipt holder signature card signed the hand receipt.	____	____

Performance Measures	GO	NO-GO
8. Ensured that all forms were filled out correctly.	____	____
9. Filed hand receipts in appropriate hand receipt holder files.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 25-400-2	
AR 710-2	
DA FORM 2062	
DA PAM 710-2-1	

Assess Battlefield Damage

093-SSG-3014

Conditions: In an operational environment (OE), supervise the performance of an organizational maintenance team or a field maintenance support team (MST) performing battlefield assessment. Given a disabled vehicle or equipment; repairers to assess the equipment; applicable -10, -20, and -30-series technical manuals (TMs), repair parts manuals, and tool kits; Department of the Army (DA) Form 2404 (Equipment Inspection and Maintenance Worksheet) or DA Form 5988-E (Equipment Inspection Maintenance Worksheet [EGA]), DA Form 5990-E (Maintenance Request [EGA]), DA Pamphlet 750-8, DA Pamphlet 738-751, Department of Defense (DD) Form 1577 (Unserviceable (Condemned) Tag - Materiel), DD Form 1577-1 (Unserviceable (Condemned) Label - Materiel), DD Form 1577-2 (Unserviceable (Repairable) Tag - Materiel), DD Form 1577-3 (Unserviceable (Reparable) Label - Materiel), Field Manual (FM) 4-30.3, and FM 4-30.31. This task can be performed in a field or garrison environment.

Standards: Supervise the organizational maintenance team or direct support (DS) MST that identified and performed repairs needed to restore a disabled piece of equipment to the minimum essential combat capabilities necessary to support a specific combat mission or to enable the equipment to self-recover. Complete all required paperwork according to DA Pamphlet 750-8, DA Pamphlet 738-751, FM 4-30.3, and FM 4-30.31.

Performance Steps

1. Brief the organizational maintenance team or DS MST on the upcoming mission to assess battlefield damage (see FM 4-30.3).
   a. Identify point of contact at unit/site.
   b. Identify the equipment to be assessed for battlefield damage.
   c. Identify the equipment needed for the upcoming mission.
   d. Explain logistics support.
   e. Plan primary and secondary routes to unit.
   f. Ensure team receives a copy of supported units' radio frequencies and call signs.
2. Monitor assigned personnel to the team according to their qualifications and availability to meet the mission needs.
3. Arrange for transportation to the site.
4. Ensure that the proper battlefield assessment procedures are followed.
   a. Review the operator/crew assessment and the safety checks made.
   b. Interview the operator/crew, if available.
   c. Conduct visual inspection.
   d. Perform self-test.
   e. Test equipment with the organizational/DS maintenance equipment.
5. Ensure the MST provides technical assistance to the organizational maintenance team as required.
6. Ensure the MST prioritizes repairs according to battlefield damage time guidelines.
7. Ensure that all required maintenance forms are completed in accordance with DA Pamphlet 750-8 and DA Pamphlet 738-751.
   a. DA Form 2404 or DA Form 5988-E.
   b. DA Form 5990-E.
   c. DD Form 1577.
   d. DD Form 1577-1.
   e. DD Form 1577-2.
   f. DD Form 1577-3.
8. Ensure a system assessment summary is completed and submitted properly.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Briefed the organizational maintenance team or DS MST on the upcoming mission to assess battlefield damage.	____	____
2. Monitored assigned personnel to the team according to their qualifications and availability to meet the mission needs.	____	____
3. Arranged for transportation to the site.	____	____
4. Ensured that the proper battlefield assessment procedures were followed.	____	____
5. Ensured the MST provided technical assistance to the organizational maintenance team, as required.	____	____
6. Ensured the MST prioritized repairs according to battlefield damage time guidelines.	____	____
7. Ensured that all required maintenance forms were filled out correctly in accordance with DA Pamphlet 750-8 and DA Pamphlet 738-751.	____	____
8. Ensured a system assessment summary was completed correctly and submitted.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	TM 750-245-4
DA FORM 5988-E	
DA FORM 5990-E	
DA PAM 738-751	
DA PAM 750-8	
DD FORM 1577	
DD FORM 1577-1	
DD FORM 1577-2	
DD FORM 1577-3	
FM 4-30.3	
FM 4-30.31	

Manage Demand Supported Repair Parts Listed on the Prescribed Load List (PLL)
093-SSG-3015

Conditions: In an operational environment (OE), conduct this task during the normal performance of your daily duties within an electronics/avionics maintenance shop. Manage demand supported repair parts for an electronics/avionics maintenance shop given Army regulation (AR) 710-2, Department of the Army (DA) Pamphlet 710-2-1, DA Form 2063-R (Prescribed Load List), DA Form 2064 (Document Register for Supply Actions), DA Form 3318 (Records of Demands-Title Insert), copy of Federal Logistics (FEDLOG) discs, unit's initial mandatory parts list (IMPL), unit's prescribed load list (PLL), and technical parts manuals. This task can be performed in a field or garrison environment.

Standards: Complete review and correct the PLL in accordance with the equipment technical parts manual, AR 710-2, and DA Pamphlet 710-2-1 for the electronics/avionics repair parts listed on the PLL.

Performance Steps

1. Review the unit's PLL for electronics/avionics maintenance shop's repair parts.
2. Verify that the electronics/avionics shop's repair parts qualify to be on the PLL list.
3. Review demand supported unit maintenance repair parts documents and ensure they meet the following:
   a. Three demands made within the control period of 180 days for Active Army.
   b. Parts were essential and had a maintenance use code of "O" (except for non-tactical telecommunications systems, air traffic control, or lifesaving systems).
4. Review non-demand supported unit maintenance repair parts documents and ensure they meet the following:
   a. Approval by the first general officer staff level in the chain of command required in order to stock.
   b. Parts essential, with a maintenance use code of "O" (except for non-tactical telecommunications systems, air traffic control, or lifesaving systems).
5. Review the initial stockage of repair parts for newly introduced end items as identified by the Support List Allowance Card (SLAC) deck.
   a. The stockage level will not be reduced the first year.
   b. If the end item is under warranty, the first year (as stipulated above) will begin upon expiration of warranty.
6. Review the mandatory stockage of repair parts as identified in the IMPL.

Evaluation Preparation: Brief Soldier: Tell the Soldier they are going to be evaluated on how well they been maintaining the unit's prescribed load list according with current Army regulations.

Performance Measures	GO	NO-GO
1. Reviewed the unit's PLL for electronics/avionics maintenance shop's repair parts.	____	____
2. Verified that the electronics/avionics shop's repair parts qualify to be on the PLL list.	____	____
3. Reviewed demand supported unit maintenance repair parts documents and ensured they met the following.	____	____
4. Reviewed non-demand supported unit maintenance repair parts documents and ensured they met the following.	____	____
5. Reviewed the initial stockage of repair parts for newly introduced end items as identified by the SLAC deck.	____	____

Performance Measures	GO	NO-GO
6. Reviewed the mandatory stockage of repair parts as identified in the IMPL.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 710-2	FM 4-30.3
DA FORM 2063-R	
DA FORM 2064	
DA FORM 3318	
DA PAM 710-2-1	

Monitor Bench Stock Operations

093-SSG-3016

Conditions: In an operational environment (OE), perform this task given Army regulation (AR) 710-2, Department of the Army (DA) Pamphlet 710-2-2, and a copy of Federal Logistics (FEDLOG) discs. This task can be performed in a field or garrison environment.

Standards: Maintain bench stock in accordance with AR 710-2 and DA Pamphlet 710-2-2.

Performance Steps

1. Ensure that the bench stock items are made up of low-cost expendable items.
2. Ensure the bench stock is stored near the work area.
3. Ensure that bench stock replenishment tags and lists are maintain with the bench stock.
4. Ensure that bench stock orders are on a prescribed schedule or as needed.
5. Ensure that the bench stock items are ordered under the correct urgency of need designator (UND).
6. Review the bench stock items list semiannually.

Evaluation Preparation: Brief Soldier: Tell the Soldier they are going to be evaluated on how well they been maintaining the bench stock according with current Army regulations.

Performance Measures	GO	NO-GO
1. Ensured that the bench stock was made up of low-cost expendable items.	____	____
2. Ensured that the bench stock was stored near the work area.	____	____
3. Ensured that bench stock replenishment tags and lists were maintained with the bench stock.	____	____
4. Ensured that bench stock was ordered on a prescribed schedule or as needed.	____	____
5. Ensured that the bench stock was ordered under the correct urgency of need designator (UND).	____	____
6. Ensured that the bench stock was reviewed semiannually.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 710-2	
DA PAM 710-2-2	

Monitor Shop Stock Operations
093-SSG-3017

Conditions: In an operational environment (OE), perform this task given a current copy of the shop stock list, Army regulation AR 710-2, Department of the Army (DA) Pamphlet 710-2-2, and a copy of Federal Logistics (FEDLOG) discs. This task can be performed in a field or garrison environment.

Standards: Maintain the shop stock according to AR 710-2 and DA Pamphlet 710-2-2.

Performance Steps

1. Ensure all repair parts and consumables listed on the shop stock meet the criteria listed in AR 710-2 and DA Pamphlet 710-2-2.
2. Ensure each item is demand supported.
3. Ensure each item's stockage level is developed in accordance with DA Pamphlet 710-2-2.
4. Ensure that excess stocks are turned in within 10 days of review.
5. Ensure that replenishment of stocks' is based on the reorder point (ROP).
6. Ensure a temporary hand-receipted is issued for the controlled cryptographic item (CCI) repair parts required by the communications security (COMSEC) maintenance activities for diagnostic purpose.
7. Ensure an inventory of the shop stock items are scheduled for the review during the correct reviewing period.
8. Review the Supply Support Activity (SSA) shop stock list to see if it was signed by the unit commander.

Evaluation Preparation: Brief Soldier: Tell the Soldier they are going to be evaluated on how well they been maintaining the shop stock according with current Army regulations.

Performance Measures	GO	NO-GO
1. Ensured repair parts and consumables listed on the shop stock met the criteria listed in AR 710-2 and DA Pamphlet 710-2-2.	____	____
2. Ensured each item was demand supported.	____	____
3. Ensured each item's stockage levels were developed in accordance with DA Pamphlet 710-2-2.	____	____
4. Ensured excess stocks were turned in within 10 days of review.	____	____
5. Ensured replenishment of stock was based on the reorder point (ROP).	____	____
6. Ensured a temporary hand-receipted was issued for the controlled cryptographic item (CCI) repair parts required by the communications security (COMSEC) maintenance activities for diagnostic purpose.	____	____
7. Ensured an inventory of the shop stock items were scheduled for the review during the correct reviewing period.	____	____
8. Reviewed the Supply Support Activity (SSA) shop stock list to see if it was signed by the unit commander.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
AR 710-2	
DA PAM 710-2-2	

Inspect Maintenance Support Team Operations

093-SSG-3019

Conditions: In an operational environment (OE), perform this task given the necessary personnel to perform an electronics/avionics maintenance support team (MST) operation, Department of the Army (DA) Pamphlet 611-21, DA Pamphlet 750-8, DA Pamphlet 738-751, Field Manual (FM) 3-25.26, and FM 4-30.3. This task can be performed in a field or garrison environment.

Standards: Ensure the correct military occupational specialty holders were assigned to a support team, briefed, and provided with transportation.

Performance Steps

1. Monitor assigned personnel according to their qualifications and availability.
2. Arrange for transportation to the site.
3. Brief the support team on mission requirements.
   a. Identify point of contact at unit.
   b. Identify equipment needed for the support mission.
   c. Explain logistics support.
   d. Plan primary and secondary routes to unit.
   e. Ensure team received a copy of supported units' radio frequencies and call signs.
4. Provide technical assistance to the support team as required.
5. Ensure that all maintenance forms are filled out correctly.

Evaluation Preparation: Setup: One of your electronics/avionics maintenance shops will deploy Maintenance Support Team.

Brief Soldier: Tell the Soldier they will be evaluated on how well they select personnel, identify test equipment and bench stock requirements, and make other pre-deploying arrangements as need before going on mission.

Performance Measures	GO	NO-GO
1. Monitored assigned personnel according to their qualifications and availability.	____	____
2. Arranged for transportation to the site.	____	____
3. Briefed the support team on mission requirements.	____	____
4. Provided technical assistance to the support team as required.	____	____
5. Ensured that all maintenance forms were filled out correctly.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA PAM 611-21	
DA PAM 738-751	
DA PAM 750-8	
FM 3-25.26	
FM 4-30.3	

Inspect Maintenance Reporting and Management Data

093-SSG-3020

Conditions: As a senior repairer, one of your responsibilities is to inspect the paperwork used in an electronics/avionics maintenance facility. In an operational environment (OE), you must inspect and manage all of the maintenance forms and records used in reporting the maintenance status of equipment repaired in the maintenance facility. If needed, the following forms, records, and publications will be available for each piece of equipment job-ordered: DA Form 2404 (Equipment Inspection and Maintenance Worksheet), DA Form 2405 (Maintenance Request Register), DA Form 2408-12 (Army Aviator's Flight Record), DA Form 2408-13 (Aircraft Status Information Record), DA Form 2408-13-1 (Aircraft Maintenance and Inspection Record), DA Form 2410 (Component Removal and Repair/Overhaul Record), Department of Defense (DD) Form 1574 (Serviceable Tag - Materiel), DD Form 1574-1 (Serviceable Label - Materiel), DD Form 1575 (Suspended Tag - Materiel), DD Form 1575-1 (Suspended Label - Materiel), DD Form 1576 (Test/Modification Tag - Materiel), DD Form 1576-1 (Test/Modification Label - Materiel), DD Form 1577 (Unserviceable (Condemned) Tag - Materiel), DD Form 1577-1 (Unserviceable (Condemned) Label - Materiel), DD Form 1577-2 (Unserviceable (Reparable) Tag - Materiel), DD Form 1577-3 (Unserviceable (Reparable) Label - Materiel), DA Pamphlet 750-8, and DA Pamphlet 738-751.

Standards: Inspect the electronics/avionics maintenance forms and records for errors and forms missing from the job packets.

Performance Steps

1. Locate closed-out and active job order packets within the electronics/avionics maintenance facility.
2. Match all job-ordered equipment serial numbers with closed-out and active job packets within the electronics/avionics maintenance facility.
3. Ensure that all required forms and records are inside the job order packets.
4. Verify that all forms and records within the job packets are properly completed.
5. Ensure that all listed discrepancies been corrected.
6. Ensure that all forms and reports are distributed or filed in accordance with DA pamphlets and Army regulations.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	GO	NO-GO
1. Located closed-out and active job order packets within the electronics/avionics maintenance facility.	____	____
2. Matched all job-ordered equipment serial numbers with closed-out and active job packets within the electronics/avionics maintenance facility.	____	____
3. Ensured that all required forms and records were in the job order packets.	____	____
4. Verified that all forms and records within the job packets were properly completed.	____	____
5. Ensured that all discrepancies had been corrected.	____	____
6. Ensured that all forms and reports were distributed or filed in accordance with DA pamphlets and Army regulations.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	Related
DA FORM 2404	FM 4-30.3
DA FORM 2405	
DA FORM 2408-12	
DA FORM 2408-13	
DA FORM 2408-13-1	
DA FORM 2410	
DA PAM 738-751	
DA PAM 750-8	
DD FORM 1574	
DD FORM 1574-1	
DD FORM 1575	
DD FORM 1575-1	
DD FORM 1576	
DD FORM 1576-1	
DD FORM 1577	
DD FORM 1577-1	
DD FORM 1577-2	
DD FORM 1577-3	

Review SAMS Reports

093-SSG-3021

Conditions: In an operational environment (OE), perform this task given Standard Army Maintenance System (SAMS) installed, completed set of required SAMS reports and forms, Automated Information System Manual (AISM) 25-L21-AHN-ZZZ-EM, AISM 25-L26-AHO-ZZZ-EM, Department of the Army (DA) Pamphlet 750-8, DA Pamphlet 738-751, and Field Manual (FM) 4-30.3.

Note: This task may be performed in a chemical, biological, radiological, and nuclear (CBRN) environment.

Standards: Review all required SAMS-1E reports and forms and correct discrepancies according to AISM 25-L21-AHN-ZZZ-EM and DA Pamphlet 750-8 or DA Pamphlet 738-751. File all reports properly and forward copies, as required.

Performance Steps

1. Ensure that the electronics/avionics maintenance operations are using all of the required SAMS-1 reports and forms.
2. Review all of the new copies of all SAMS-1 reports and forms needed to run the electronics/avionics maintenance operations.
3. Compare previous and newly printed SAMS-1 reports and forms for discrepancies.
4. Review the new SAMS-1 reports and forms for discrepancies.
5. Correct all identified discrepancies.
6. Ensure that all SAMS-1 reports and forms are distributed or filed in accordance with Army regulations.

Evaluation Preparation: Ensure all items required in the condition statement (or appropriate substitutions) are on hand and all safety requirements are met.

Performance Measures	**GO**	**NO-GO**
1. Ensured that all required SAMS-1 reports and forms required for electronics/avionics maintenance operations were being used.	____	____
2. Reviewed new copies of all SAMS-1 reports and forms needed to run the electronics/avionics maintenance operations.	____	____
3. Compared the previous SAMS-1 reports and forms with the newly printed reports and forms for discrepancies.	____	____
4. Reviewed the new SAMS-1 reports and forms for discrepancies.	____	____
5. Corrected all identified discrepancies.	____	____
6. Ensured that all SAMS-1 reports and forms were distributed or filed in accordance with Army regulations.	____	____

Evaluation Guidance: Score the Soldier GO if all performance measures are passed (P). Score the Soldier NO-GO if any performance measure is failed (F). If the Soldier fails any performance measure, show what was done wrong and how to do it correctly.

References

Required	**Related**
AISM 25-L21-AHO-ZZZ-EM	
AISM 25-L26-AHO-ZZZ-EM	
DA PAM 738-751	
DA PAM 750-8	
FM 4-30.3	

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GLOSSARY

Section I - Acronyms & Abbreviations

AAR	After Action Review; After Action Report
AC (3)	alternating current
ACCP	Army Correspondence Course Program
AIPD	Army Institute for Professional Development
AISM	Automated Information Systems Manual
AIT	Advanced Individual Training
ALC(1)	Advanced Leaders Course
AM	amplitude modulation
AMCOM	Aviation and Missile Command
AMDF	Army Master Data File
AN	annually
AR	Army regulation
ARTEP	Army Training and Evaluation Program
ASL	authorized stockage list
BA	biannually
BCT	basic combat training; brigade combat team; battle coordination team
BDAR	battlefield damage assessment repair
BII	basic issue items
BW	biweekly
CALSET	Calibration Set
CBRN (1)	chemical, biological, radiological, and nuclear
CBU (1)	calibrate before use
CCI	controlled cryptographic item
CCW	counterclockwise
CLT (1)	common logistic task

CNR	calibration not required
COMSEC	communications security
CTS	Contact Test Set
CTT	common task test
DA	Department of the Army
DA Form	Department of the Army Form
DA Label	Department of the Army Label
DA PAM	Department of the Army Pamphlet
DC (1)	direct current
DD Form	Department of Defense Form
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Code
DS	direct support
DVC	device
EIR	equipment improvement recommendation
ELSEC	electronic security
F	fail; failed
FEDLOG	Federal Logistics
FM	field manual; flare multiunit; force module; frequency-modulated; frequency modulation
FM (1)	field manual
Freq	frequency
HQ	Headquarters
IAW	In Accordance With
IBM	International Business Machines
ICE	Integrated Calibration Environment
ID	identification
IMPL	initial mandatory parts list
IMRF	Instrument Master Record File

LED	light emitting diode
MAC	Maintenance Allocation Chart
MCP	maintenance collection point
MDS (1)	mission, design, and series
METL	mission essential task list
MO	monthly
MOS	military occupational specialty
MSC (2)	major subordinate command
MSD	maintenance support device
MST	maintenance support team
MTP	mission training plan
MWO	modification work order
N (2)	Neutral
NCO	noncommissioned officer
NCOER	Noncommissioned Officer Evaluation Report
NIIN	national item identification number
NMP	national maintenance point
NSN	national stock number
OPORD	operations order
OE	operational environment
P	pass; passed
PDS	Pressure Distribution System
PLL	Prescribed Load List
PMCS	preventive maintenance checks and services
PN	part number
PPS	pneumatic pressure standard
QDR	Quality Deficiency Report
QMP	Qualitative Management Program

QT	quarterly
R	Reverse
RADIAC	Radiation detection, indication, and computation
RDL	Reimer Digital Library
RF	radio frequency
RO/ROP	reorder/reorder point
ROP	reorder point
SA (2)	semiannually
SAMS-1	Standard Army Maintenance System-Level 1
SAMS-2	Standard Army Maintenance System-Level 2
SARSS-O	Standard Army Retail Supply System-Objective
SASO	stability and support operations
SF	standard form
SFDLR	stock funding of depot level repairables
SIGSEC	signal security
SL	skill level
SLAC (1)	Support List Allowance Card
SLC(1)	Senior Leaders Course
SM	Soldier's Manual
SMCT	Soldier's Manual of Common Tasks
SOF (1)	safety of flight
SOP	standing operating procedure
SPORT	Soldier's Portable On-System Repair Tool
SSA	Supply Support Activity
SSG (1)	staff sergeant
STE/ICE-R	Simplified Test Equipment for Internal Combustion Engine, Reprogrammable
STP	Soldier Training Publication

TAMMS	The Army Maintenance Management System
TB	technical bulletin
TB MED	technical bulletin (medical)
TC (1)	training circular
TG	Trainer's Guide
TI	technical inspection
TIMMS	TMDE Integrated Material Management System
TM	technical manual
TMDE	test, measurement, and diagnostic equipment
TNG	training
TRADOC	Training and Doctrine Command
UIC	unit identification code
ULLS-G	Unit Level Logistics System-Ground
UMCP	unit maintenance collection point
UND	urgency of need designator
UNIT	Trained in the Unit
U.S.	United States
USACASCOM	United States Army Combined Arms Support Command
USAOMEMS	US Army Ordnance Munitions and Electronics Maintenance School
USATA	United States Army Test, Measurement, and Diagnostic Equipment Activity
UUT	unit under test
WK	weekly

Section II - Terms

Army Training and Evaluation Program (1)
The ARTEP is the cornerstone of unit training. It is the umbrella program used by the trainer and training manager in the training evaluation of units. The ARTEP is a complete program that enables commanders to evaluate and develop collective training based on unit weaknesses, then train the unit to overcome those weaknesses and reevaluate. Success on the battlefield depends on the coordinated performance of collective and individual skills that are taught through the ARTEP mission training plan (MTP).

cross training
The systematic training of Soldiers on tasks related to another duty position.

DD Form
Department of the Defense Form.

duty position
Duty positions are determined by military occupational specialties (MOSs), which are subdivided into five major skill levels (SLs). These SLs are further subdivided into related individual tasks which identify a Soldier's SL or job.

Evaluation guide
The section of the task summary in a Soldier's manual that lists pass/fail performance measures for evaluating the Soldier's performance on the task.

FED LOG
The logistics information system published by the Defense Logistics Information Service (DLIS). FED LOG contains information on more than 7 million stock numbers and 12 million part numbers. Updated monthly, FED LOG is available in CD-ROM or DVD format.

GO/NO-GO
This is a pass-fail criterion of evaluation whereby the Soldier cannot be "partially correct." The Soldier either meets the standard or does not meet the standard.

Individual training
Training that prepares the Soldier to perform specified duties or tasks related to assigned duty position or subsequent duty positions and skill level.

merger training
Training that prepares an NCO to supervise one or more different MOSs at lower skill levels when the Soldier advances in skill level in his career management field.

military occupational specialty
A group of similar duty positions.

mission essential task list (METL)
A compilation of collective mission essential tasks that must be successfully performed if an organization is to accomplish its wartime missions.

MOS technical task
A task related to your duty position and skill level.

performance measure
Action or resulting product that determines if the Soldier has performed a task correctly.

R (1)
Reverse

SAMS1 (1)
Software package designed to manage maintenance operations, including work order registration, repair parts, stockage and requisition, manpower utilization, and readiness reporting.

skill level
Identifies task proficiency, or ability typically required for successful performance at the grade with which the skill level is associated. The skill levels by grade are shown as follows: Skill levels => 1 2 3 4 5; Enlisted - E 1/2, 3/4, 5, 6, 7, 8/9; Warrant - W 1/2, 3, 4, 5; Officers - O 1/2, 3, 4, 5, 6.

skill qualification test
A test of the Soldier's ability to perform the tasks in a Soldier's manual. This test has been replaced by the self-development test.

Soldier's Manual
An STP listing of critical tasks for each SL in a particular MOS.

task
A clearly defined and measurable activity accomplished by individuals and organizations. It is the lowest behavioral level in a job or unit that is performed for its own sake. It must be specific; usually has a definite beginning and ending; may support or be supported by other tasks; has only one action and, therefore, is described using only one verb; generally is performed in a relatively short time (however, there may be no time limit or there may be a specific time limit); and it must be observable and measurable. The task title must contain an action verb and object and may contain a qualifier.

trainer's guide
A publication that covers the information needed by your commander, training manager, and trainer to plan, conduct, and evaluate training in your MOS. There is a trainer's guide for each MOS.

train-up
The opportunity for an individual to train to a higher skill level in his or her MOS or CMF; certification may be involved.

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By Order of the Secretary of the Army:

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